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22 August 1984

# USSR Report

AGRICULTURE

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USSR REPORT  
AGRICULTURE

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## LIVESTOCK FEED PROCUREMENT

### BELORUSSIAN GRASS MEAL PROCUREMENT DEFICIENT

Minsk SEL'SKAYA GAZETA in Russian 5 Jul 84 p 1

[Unattributed article: "Raise the Rate of Procurement and the Quality of Grass Meal."]

#### Summary of Operations

Oblast	Grass meal sales to the state (percent of plan) to 1 July 1984	By quality class (percent of sales to state)		
		No 1	No 2	No 3
Brest	32.9	12.1	44.4	43.5
Vitebsk	28.9	16.9	39.6	43.3
Gomel	46.5	14.0	62.6	23.4
Grodno	35.5	34.0	44.1	21.9
Minsk	38.6	16.3	34.4	49.3
Mogilev	34.7	17.1	39.9	43.0

[Text] Grass meal is a most important component in the production of mixed-feed. Its introduction permits the raising of feed quality, the expanding of production volume and the substantial reducing of grain use for feed purposes.

The republic economy this year must put at the disposal of the state for the production of mixed-feeds 140,000 tons of high-vitamin content grass meal. There are many republic farms where the production and sale of this grass meal to the state is well organized. These are the Progress and Rodina kolkhozes in Grodnenskiy Rayon, Progress Kolkhoz in Mostovskiy Rayon, the Bor Sovkhoz in Novogrudskiy Rayon and others.

Good organization of operations, observance of all technical standards, the perfected "green conveyor," effective control over the quality of the operations and the brigade contract permit these farms to annually meet the assigned production volumes and to sell to the state high quality grass meal. It should be noted that at this time many enterprises have already fulfilled contract obligations for the sale of this valuable product to the state. These are the kolkhozes imeni Yuritskiy in Gomelskiy Rayon; imeni Kirov and Put' k Kommunizmu in Dobrushskiy Rayon; Kolkhoz imeni Kirov in Kalinkovichskiy Rayon; the sovkhoses Dneprovskiy in Loevskiy Rayon; Zhlobin in Zhlobinskiy Rayon, and Boroviki in Svetlogorskiy Rayon.

There is available this year every possibility for the production of high-vitamin grass meal and the successful fulfillment of the state plan for its procurement. The enterprises' inventory of more productive AVM [computerized processing unit] and harvesting units has been augmented. At the same time the procurement-transportation process has been improved. There was a pretty good first harvest on the fields and meadows and the second harvest grasses are coming along.

However, despite the demands of administrative agencies, the managers of a number of enterprises and leaders of a number of rayons have not taken the measures necessary to ensure plan fulfillment for the production and sale of high-vitamin meal. As a result, procurement is not going satisfactorily. As of 1 July, only 51,100 tons of meal, 36.5 percent of the plan, had been delivered to the state.

The farms of Vitebsk, Mogilev and Brest oblasts are copying poorly with deliveries to the state; they have met 29 percent, 35 percent of the plan and 33 percent, respectively. Plans for the sale of grass meal to the state have not been met in the following rayons: Stolinskiy, Dubrovenskiy, Chashnikskiy, Dokshitskiy, Ivanovskiy, Molodechnenskiy, Stolbtsovskiy, Pukhovichskiy, Kopyl'skiy, Vileyskiy, Cherikovskiy, Krasnopol'skiy, Klichevskiy, Krichovsky, Shklovskiy, Mstislavskiy, Khoynikskiy, Kalinkovichskiy, Ushachskiy, Berezovskiy, and Gorodokskiy.

As of 28 June, 124 republic farms have offered no grass meal at all for sale. They include 31 farms in Vitebsk Oblast, 26 in Minsk Oblast, 11 in Mogilev Oblast, 35 in Gomel Oblast and 21 in Brest Oblast.

Grass meal of low quality is arriving from a number of rayons. This applies to most of all farms in Brest, Minsk and Mogilev oblasts, where delivery quotas for first class meal have been met 12.1 percent, 16.3 percent and 17.1 percent, respectively. Kolkhozes and sovkhoses of the following rayons have not sold the state a single ton of first class grass meal: Berezovskiy, Ivanovskiy, Stolinskiy, Dokshitskiy, Dubrovenskiy, Tolochinskiy, Sharkovshchinskiy, Shumilinskiy, Braginskiy, Kormyanskiy, Oktyabr'skiy, Petrikovskiy, Rogachevskiy, Lidskiy, Ostrovetskiy, Oshmyanskiy, Shchuchinskiy, Dzerzhinskiy, Kletskiy, Kopyl'skiy, Stolbtsovskiy, Belynicheskiy, Krichovskiy, Khotimskiy and Cherkovskiy. This is an extremely alarming situation.

The low quality of the grass meal supplied as a component in mixed-feed to industry can be explained by the fact that in a number of farms the necessary source of raw materials has not been established and legumes have not been used for this purpose. Specialized links to delivery the crop to processing points have not been organized everywhere, and grasses that are beyond optimum ripeness are being introduced into the processing operation. Often grass that has been cut and is intended for processing at an AVM lies for a long time in the field and, thereby, loses its quality. In several kolkhozes and sovkhoses the pay of workers engaged in producing high-vitamin meal is not set so that it precisely depends on quality indicators.

In most kolkhozes and sovkhoses integrated work teams for the production of grass meal work one shift. Throughout the republic because of various organizational difficulties 136 AVM's are not being used, and this is 9 percent of their overall total. Especially many stand idle in Brest, Mogilev and Minsk oblasts.

Control over the vitamin meal quality is poorly set up. In most of the rayons quality verification is conducted based only on the carotene content; the protein content and the content of other components are not considered, and this leads to disagreement between buyers and sellers, customers and suppliers.

It is necessary to immediately eliminate the existing troubles and to take effective measures to raise the rates of delivery and the quality of grass meal for the state mixed-feed industry and to ensure unconditional fulfillment of the plan on schedule.

8750

CSO: 1824/356

## LIVESTOCK FEED PROCUREMENT

### TECHNOLOGY FOR QUALITY FEED GRASS PROCUREMENT DISCUSSED

Moscow TEKNIKA V SEL'SKOM KHOZYAYSTVE in Russian No 6, Jun 84 pp 3-4

[Article: "Procuring Feed of the Highest Quality"]

[Text] The Soviet people responded fervently to the goals put forth in a speech by the General Secretary of the CPSU Central Committee, Comrade K. U. Chernenko, at the All-Union Economic Conference on Problems of the Agro-Industrial Complex--to more energetically deal with problems related to intensive economic development, to improve the effectiveness of production and to better utilize the developed material-technical potential of all existing resources. Village workers are full of striving to increase agricultural production output, to decrease its cost and to make a worthy contribution to the fulfillment of the Food Program.

Workers in livestock raising have begun to deal with this goal earnestly. During the third year of the five-year plan there has been a noticeable increase in the production of meat, milk, eggs and wool. The average milk yield per cow increased by 7 percent, the average daily weight gain of cattle being fattened--by 5 percent, and of hogs--4 percent. In comparison with 1982 the procurement of livestock and poultry increased by 1.5 million tons, of milk--by 5.4 million tons, of eggs--by 1.8 billion, and of wool--by 10,000 tons.

The achieved success is based to a significant degree on a more organized transfer of livestock to pasture upkeep, on supplying it with green feeds during the summer period as well as on an increase in the production and procurement of coarse and succulent feeds: hay--by 20 percent, haylage--by 8 percent and feed root crops--by 9 percent.

This was encouraged by extensive work to improve the structure of feed crops, to increase their productivity and to increase the productivity of natural haylands and pastures. A great deal of attention was focused on the introduction of an efficient technology for the procurement and storage of feeds, on progressive forms of organizing and reimbursing labor and on strengthening the material-technical base of feed production.

However, many kolkhozes and sovkhoses have not yet achieved the necessary growth in feed production and the effective use of feed fields; feed losses are tolerated during the period of their procurement and storage.



Great losses in the cultivated harvest, especially of seeded and meadow grasses, are tolerated because of their untimely harvesting. According to data from the All-Union Scientific-Research Institute on Feeds, as a result of not adhering to an optimal schedule for harvesting grasses and feed crops up to 40-45 percent of nutritive substances are lost.

Mowing grasses according to the agrotechnical schedule enables us to produce almost everywhere a supplementary 1-2 full-value hay harvests and to increase the yield of feed units by 20-25 percent and protein--by 50 percent per hectare. Of great significance in decreasing losses of nutrients and in producing feed of high quality is the correct selection of technology for procurement and storage after a consideration of existing weather conditions.

At the present time over 70 percent of hay is procured according to traditional multi-operational technology in loose form with field drying and storage in stacks. Not infrequently losses of nutritive substances reach 35-50 percent here. The expenditure of work time per ton of this feed reaches 7 hours and more.

Progressive technology for hay procurement involves pressing into bales or rolls and drying via active ventilation. The nutritive value of such feed is significantly higher and there are fewer expenditures for shipments to storage areas. In harvesting high-yield clover-timothy grass mixtures using press-crop collectors total losses of dry substance do not exceed 27 percent of the original mass.

At the Podol'skaya MIS [Machine Testing Station] technology has been developed to procure leguminous hay in 1-1.5 days with drying under natural conditions. Simultaneously with mowing, flattening is employed; then grass is sun-dried in swathes and stirred 1-2 times. When a moisture content of 28-30 percent is achieved the grass is raked into rolls and dried to a moisture content of 20-22 percent and pressed.

The procurement of hay with drying using active ventilation enables us to obtain high-quality feed under any type of weather conditions. In comparison with field drying in such hay losses of carotene are less by half and more and nutritive value is higher by 20-50 percent.

The sovkhoses and kolkhoses of Lithuania, Latvia and Estonia extensively utilize progressive methods of feed procurement. Here up to 80 percent of the hay is procured in pressed form and over 50 percent is dried to completion using active ventilation. As a result practically all feeds are procured at the higher class. Last year, for example, in the enterprises of Lithuania only 0.1 percent of hay was not classified, in Estonia--1 percent and in Latvia--2 percent.

In order to preserve the high nutritive value of hay, storage facilities of the closed type are needed. In them all loading-unloading work can be mechanized. In the enterprises of Latvia there is widespread use of standard shed storehouses equipped with a bridge crane or a crane jib in a unit with a grab device. An operator operates this mechanism from a remote-controlled



panel. The productivity of the means of mechanization equals 22 tons per hour for the stacking and cutting of hay.

The laying-in of feed in the form of haylage is efficient. Its storage technology enables us to procure high-quality feed in a short period of time with minimal losses of nutritive substances and insignificant labor expenditures. All technological operations are mechanized. As a result, the production of haylage is 20-30 percent cheaper than that of hay and silage. In observing all technological requirements total losses of dry substance do not exceed 15 percent when procuring such feed.

The storage of haylage in tower silos meets the conditions of industrial technology more fully. Practical experience shows that in comparison with other storage methods in this one the preservation of nutritive substances is 15-19 percent greater. Haylage towers are widely used in the enterprises of Belorussia, the Ukraine, the Baltic republics, the Tatar ASSR, Sakhalin and a number of other oblasts of the RSFSR.

In the Rakhva Vyyt Kolkhoz of Khar'yuskiy Rayon of the Estonian SSR in 1983 4,800 tons of haylage were stored in towers, in the Za Kommunism Kolkhoz of Korostenskiy Rayon of Zhitomir Oblast--over 1,600 tons and in the Komsomolets Sovkhoz of Anivskiy Rayon, Sakhalin Oblast--over 17,000 tons. All feed was first class in quality.

Among all types of succulent feeds silage is most prevalent in the rations of animals. But it is not enough to raise a good harvest of silage crops. It is important to know how to prepare high-quality silage. Unfortunately, losses of this type of feed are still great. In many enterprises the output of silage does not exceed 65-70 percent of ensilaged mass, and losses of nutritive substances reach 25-30 percent.

Curtailling the loss of nutritive substances during ensiling means millions of tons of additional feed. The effectiveness of utilizing lands for silage crops is improving.

According to existing data, the most nutritional silage is that prepared from the green mass of corn with ears in the waxy and milky-wax stage of ripeness of the grain. This type of feed has the optimal pH, a good ratio of lactic and acetic acid (70:30); there is an absence of butyric acid and the quantity of ammonia is insignificant.

Existing practices for raising corn, especially in the Non-Chernozem Zone of the country, do not facilitate the universal production of ears with a milky-wax or waxy stage of ripeness of the seed. This has a negative effect on the content of dry substance in silage; its nutritive properties decrease. However, in enterprises in which the necessary attention is given to raising crops for silage purposes, in which there is a strict observation of agro-technical measures and in which grain technology is utilized, good results are achieved. In the Non-Chernozem Zone early-maturation, average early varieties and hybrids should be raised on permanent plots.

In order to decrease losses of nutrients it is important to alter the length of the cutting during procurement depending upon moisture content and the developmental phase of the plant. With a moisture content below 70 percent the length of sections of crushed mass should be 1.5-2.0 centimeters; with a moisture content of 70-75 percent in the phase of milky-wax grain ripeness--2-4 centimeters and with a greater moisture content--5-7 centimeters.

It is essential to remember that in ensiling highly moist masses (over 80 percent moisture content) losses of dry substance in feed increase. An effective means of decreasing losses of nutritive substances is chemical preservation. The use of preserving substances (formic acid, benzoic acid, acetic acid, propionic acid and others) increases the output of ready silage by 15-20 percent. However, the extensive introduction of this method of ensiling feeds is being hindered by the absence of equipment for applying preservatives.

The experience involved in preparing mixed silage is deserving of dissemination. For this up to 50 percent of the mass is made up of corn ears with grain at the milky-wax or waxy stage of ripeness; potatoes, carrots, sugar beets and green mass of pulse crops are also used. A kilogram of such silage contains up to 0.43 feed units. Its use allows us to decrease the expenditure of grain for forage purposes.

At the present time an energy-saving technology has been developed for harvesting corn at the stage of waxy ripeness or beginning of full grain maturation with the crushing of ears on highly efficient stationary machines and storage of the mass in hermetically-sealed trenches or towers. One kilogram of dry substance of ensiled corn grain contains about 1.5 feed units and 70 grams of digestible protein. With a natural moisture content (40 percent) this equals 0.9 feed units and 42 grams of digestible protein. The nutritive value of 1 kilogram of crushed ears with grain at this moisture level is 0.78 feed units.

Often low-quality raw materials are used to prepare grass meal, technology is not adhered to and a large consumption of liquid fuel is tolerated. This results in a drop in the quality of feed and increases its cost. Considering the importance of economizing on fuel and energy resources the production of grass meal must be strictly controlled. Each enterprise producing such types of feed must develop a raw-materials conveyor that will secure the uninterrupted production of high-quality green mass.

The experience of many enterprises shows that to intensify the production of coarse and succulent feeds and to raise their quality the highly-efficient use of feed-harvesting machines and equipment is of exceptional importance. For example, in the Komsomol Sovkhoz of Chardarinskiy Rayon, Chimkent Oblast, last year 7,100 tons of hay was procured in bales. Output per one press-crop collectors equalled 593 tons. Machine operator P. A. Kostrov of the Kolkhoz imeni Lenin of Koverninskiy Rayon, Gorkiy Oblast, procured 776 tons of pressed hay during the season as compared to the planned 400 tons. In a number of enterprises of the Lithuanian SSR the output per Ye-281 feed-harvesting combine was 7,000-12,000 tons of green mass. Many machine operators in

Belorussia mow 12,000-13,000 tons of green mass per season. In the Inter-Farm Enterprise for the Production of Grass Meal of Valmiyerskiy Rayon, Latvian SSR, the output per one standard drying unit comprised 1,073 tons.

However, in a number of places feed-harvesting technology is not utilized effectively by far and a significant portion of it does not participate in work for a variety of reasons. In 1983 in Ukrainian enterprises the output per press-crop collector was only 80 tons; in Moldavia and Armenia 60-80 tons of grass meal was produced per standard drying unit.

With each passing year the introduction into feed production of collective contracts becomes more widespread--the bases for the maximal utilization of material-technical resources and for the assimilation of progressive technology for feed procurement. At the Pedigree Plant imeni Litvinov of Slavyanoserbskiy Rayon, Voroshilovgrad Oblast, last year the mechanized feed-procurement detachment headed by V. A. Andriyevskiy procured 2,007 tons of first-class hay utilizing active ventilation. The contract link of N. V. Kuklin in the Chaganskiy Sovkhoz of Terektinskiy Rayon, Ural Oblast, procured 2,260 tons of first-class pressed hay. The cost of 1 ton of it equalled 0.96 rubles instead of the planned 15.5 rubles. High indicators were achieved by feed procurers in subsections of many enterprises in Moscow, Kirov, Gorkiy, Omsk, Turgay, Brest, Cherkassy and a number of other oblasts.

A progressive form of organizing and reimbursing labor must be utilized in every enterprise.

Machine builders are still greatly in debt to village workers. Kolkhozes and sovkhozes are still greatly in need of machines to accelerate the drying of grasses, of loading-unloading apparatuses for loose and pressed hay, highly productive crushers of coarse feeds and mixers to prepare mixed silage. Large-capacity trucks are needed to service self-propelled feed harvesting combines.

The success of feed procurement depends greatly on the work of repair-service subsections of Sel'khoztekhnika [Agricultural Equipment Association], on the uninterrupted supplying of kolkhozes and sovkhozes with spare parts and on the timely technical servicing of feed-harvesting technology.

A leading role in the struggle to increase the production and improve the quality of feeds and in decreasing the expenditure of labor and resources for this will be played by the RAPO. It is called upon to direct the efforts of partners at the rapid, high-quality completion of all feed-procurement operations.

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CSO: 1824/355

## LIVESTOCK FEED PROCUREMENT

### PROGRESS OF FEED PROCUREMENT IN ARMENIA

Yerevan KOMMUNIST in Russian 8 Jul 84 p 1

/Article: "More Attention To Feed Procurement Work"/

/Text/ The mowing of grasses has commenced on farms in the republic's plain and foothill zone. Roughly 336,000 tons of coarse and succulent feed have accumulated.

Complicated conditions have developed in the feed procurement work. On some farms a disruption has taken place in the growth of the plant stand and in the growing season for the plants. Thus success in achieving the planned feed supply volumes is conditioned by which agrotechnical measures will be employed during this period, for the purpose of intensifying the growth in fodder, ensuring efficient tending of the crops, reducing losses in working time to a minimum, completing the crop harvesting work and the preparation of the coarse and succulent feed as rapidly as possible and steadily carrying out the technological requirements. A decisive factor here -- reliable and continuous operation of the equipment.

A reliable factor for ensuring guaranteed feed production in the republic is that of irrigated land, the area of which in recent years has been expanded by 20,000 hectares and has reached 93,000 hectares. The limits attained by many farms testify to the fact that the task of obtaining 300 or more quintals of fodder from an irrigated hectare is a fully realistic one.

The rates of growth for feed production at the kolkhozes and sovkhoses are slowing down mainly owing to the inefficient use of irrigated lands and water resources. All-round agrotechnical measures and nighttime irrigation work are still not being carried out to satisfaction out on the irrigated fields. Proper attention is not being given to the training of irrigation workers or to their material and moral incentives. Progressive irrigation methods are being introduced into operations very slowly in the various regions and considerable water losses are being tolerated. As a result of the faulty operation of the inter-rayon canals and intra-farm irrigation network and also wasteful use of the water resources, the efficiency of the republic's irrigation systems is only 0.59.

The ministries of agriculture and land reclamation and water management, Glavarmvodstroy, RAPO /rayon agroindustrial association/ councils and the farm



leaders must undertake practical steps aimed at eliminating the shortcomings in irrigation work, preventing water losses, raising the cropping power of the irrigated lands and achieving the planned rates for the intensification of this guaranteed sector for field feed production.

The proportion of natural haying lands in the balance of internal feed production is essential. In 1983, for example, more than 43 percent of the hay accumulated by the kolkhozes and sovkhoses was obtained from natural haying lands. Meanwhile, proper attention is not being given to the work of tending these lands. The appropriate organizations must activate the work of tending the natural feed lands and, where possible, organize irrigation for them, establish strict control over the use of the haying lands and undertake all-round measures aimed at transforming them into rich lands. Concern must be displayed today for organizing secondary sowings of feed crops on newly available arable land and organizing the autumn green production line. This year the farms must display greater concern for setting aside seed fields and for ensuring that they are tended in an efficient manner.

The kolkhozes and sovkhoses have for the most part completed their work of repairing, cleaning and disinfecting the areas to be used for stacking the hay, threshing floors and the containers for haylage and silage. The standard containers for laying in haylage and silage have been increased to 730,000 tons. Through the republic's Armsel'khozkhimiya Association, the farms have been supplied with approximately 120 tons of substances and organic acids for use in the preservation of feed. The Ministry of Agriculture, the RAPO councils and the farm leaders must increase in every possible way the volumes of preserved feed. Indeed, whereas the losses in nutritional value in the initial fodder, during the preparation of high quality silage and haylage using the traditional method, amount to 15-30 percent, when properly preserved the losses do not exceed 5 percent.

Attention must be given to constantly observing the technological requirements for feed preparation and to reducing to a minimum the losses in the initial nutritional value of plants.

As a result of crude technological violations -- failure to bring the bulk to the required degree of wilting and poor tamping down and filling of the containers -- 71.1 percent of the haylage laid away in 1983 was adjudged to be of low grade quality. Considerable losses ensue from low quality hay and silage. More than one half of this feed is considered to be of 3d class quality or low-grade. A violation of the technological requirements for gathering in the hay takes place mainly owing to delays in carrying out the mowing and drying work or poor dehydration of the bulk. Each day's delay in carrying out the mowing and drying work results in a nutrient loss of 2-3 percent.

Many leading farms throughout the country, owing to the introduction of new hay processing technologies -- forced ventilation, preservation and crushing -- have reduced the losses in initial fodder nutrients by almost twofold. Meanwhile, the mentioned progressive technologies are being introduced into operations very slowly at the republic's kolkhozes and sovkhoses. In order to reduce the losses in initial nutritional value in the fodder and also feed



losses, more efficient use must be made of the feed preparation shops and feed kitchens, the number of which has reached 309 throughout the republic. In addition to processing feed during the wintering period for the public herd, their capabilities must be used for preparing granulated and briquetted feed as well as monofeed.

Straw constitutes an important reserve for augmenting the feed supply for livestock wintering. More attention must be given to the problems concerned with its efficient use in the various areas. During the ensiling of this type of feed, its nutritional value is raised almost twofold and improvements are noted in some of its other qualities.

Today the RAPO councils and the farm leaders and specialists must display concern for creating waterproof containers and procuring the components for the solution required for ensiling and also the appropriate equipment and units.

The successful carrying out of the feed harvesting work requires the rapid completion of repairs on those roads leading to the feed fields and also the placing of the weighing and laboratory economies in proper working order.

A decisive condition -- raising labor and technological discipline out on the feed fields and implementing improvements in accounting work and in the warehousing and storage of the feed.

Great advantages can be realized from the launching of an extensive socialist competition out on the feed fields, publicizing and introducing into operations the experience of leading workers and issuing incentives to those who achieve high indicators. The best prerequisite for efficient work organization, both out on the fields and on the feed lands -- the introduction of contracts into operations.

The obligation of scientists and specialists -- to uncover on each farm reserves and methods for raising the return from the feed lands, reducing losses, strengthening the feed base and employing all of these factors for ensuring satisfactory wintering conditions for the public herd.

To overcome the difficulties which arise, to mobilize all forces in behalf of successful feed procurement operations, to achieve the desired rates for increasing the production of livestock products and to make a worthy contribution towards carrying out the Food Program -- this is the primary task and a matter of honor for our agricultural workers.

7026  
CSO: 1824/582

## LIVESTOCK FEED PROCUREMENT

### UZBEK FEED CROP PROGRESS REVIEWED

Tashkent PRAVDA VOSTOKA in Russian 17 Jun 84 p 2

/Article: "Feed -- The Foundation for Animal Husbandry"

/Excerpt/ According to data supplied by the Central Statistical Administration for the Uzbek SSR, by 11 June the republic's kolkhozes and state farms had procured 1,294,900 tons of coarse feed -- 20.3 percent of the plan.

The workers in a number of rayons had already fulfilled their feed procurement plans by 40-60 percent. However, the leaders of many kolkhozes and sovkhoses and agricultural organs are not undertaking proper measures aimed at accelerating the feed procurement rates. As a result, labor productivity is low, the feed procurement brigades and teams are not completely staffed with personnel and equipment or transport means, the alfalfa harvest is being carried out at a slow tempo, violations are being tolerated in the hay preparation and storage technology and this is leading to a shortfall in feed and to a reduction in its quality.

Under this year's conditions, a requirement exists for mobilizing all of the available potential and reserves in the interest of accelerating the grass harvest rates and creating the required supply of hay and haylage. However, last week many rayons and oblasts permitted reductions to take place in the feed procurement rates.

Compared to Tashkent, Surkhan-Darya and Kashka-Darya oblasts where 34,000-40,000 tons of feed were procured during the week, on farms in Andizhan Oblast the increase amounted to only 900 tons, Bukhara Oblast -- 2,000 tons, Navoi Oblast -- 5,600 tons, Samarkand Oblast -- 10,000 tons and in Khorezm Oblast -- no increase recorded during the week.

The time is at hand for completing the second alfalfa cutting. However, of 15,600 hectares in Bukhara Oblast, it has been cut down on an area of only 1,165 hectares. Sverdlovskiy, Gizhduvanskiy, Vabkentskiy, Romitanskiy and Bukharskiy rayons have fulfilled their feed procurement plans by only 2.4-4.5 percent.

The second cutting of grasses is proceeding slowly in Andizhan, Dzhizak, Fergana, Syr-Darya and Navoi oblasts.

In Pakhtachiyskiy, Narpayskiy, Samarkandskiy and Kattakurganskiy rayons in Samarkand Oblast the plan for procuring coarse feed was fulfilled by 35-41 percent and in Sovetabadskiy, Koshrabadskiy, Ishtykhanskiy, Bulungurskiy and Akdar'inskiy rayons -- by only 9-20 percent. The procurement of feed has fallen behind sharply on farms in Bozskiy, Andizhanskiy, Kurgantepinskiy, Moskovskiy, Altynkulskiy, Alatskiy, Karakulskiy, Peshkunskiy, Shafirkanskiy, Guzarskiy, Dekhkanabadskiy, Kasanskiy, Kokdalinskiy, Chirakchinskiy, Kasansayskiy, Narynskiy, Uychinskiy, Chustskiy and many other rayons.

In the face of an overall protein deficit in the animal ration, the work concerned with producing vitamin grass meal has fallen behind. In the Karakalpak ASSR, where great opportunities exist for preparing grass meal from common reeds, only 4 of 46 units are in operating condition, in Syr-Darya -- 7 out of 34, in Bukhara Oblast -- only 3 out of 18 and in Khorezm Oblast -- one out of 20. The leaders and specialists of kolkhozes, sovkhozes and Goskomsel'khoztekhnika must ensure the efficient utilization of each unit and their highly productive operation.

At the present time, importance is being attached on each farm and in each rayon to examining in a thorough manner why some farms are not cutting down their grasses on a timely basis, implementing specific measures aimed at accelerating the work and organizing the work in a manner so as to ensure that each day is used for the creation of a reliable supply of feed. Each cutting of alfalfa must be completed within 5-7 days, the crop must not be allowed to blossom, the harvesting of natural coarse-stalk grasses must be carried out, the common reeds must be cut down, especially for the preparation of hay meal, all of the straw must be gathered up, all of the required measures must be undertaken to ensure the development of high yields for the corn and other forage crops and high quality lined containers and equipment for use in harvesting the corn and laying in the silage must be prepared.

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## LIVESTOCK FEED PROCUREMENT

### ARTICLE CALLS FOR 'STRONG SUPPLY' OF FEED

Tashkent PRAVDA VOSTOKA in Russian 1 Jul 84 p 1

/Article: "A Strong Supply of Feed Is Required"/

/Excerpt/ This year the grasses have not undergone normal development on individual pasture tracts of land. Under these conditions, each kolkhoz and sovkhos should implement a system of effective measures aimed at creating an adequate supply of rich feed, procure more high quality alfalfa hay, lay in haylage and prepare vitamin meal. The productivity of the herd, the successful carrying out of the livestock wintering period and the fulfillment of high socialist obligations in animal husbandry will depend upon how well the farms will be able to cope with this task.

The circumstances call for special attention to be given to the production of feed on irrigated land and to obtaining high yields of corn, alfalfa and other forage crops. Here we have in mind the need for carrying out no less than 6-7 cuttings of alfalfa. Meanwhile, on many farms and in many rayons the schedules are being neglected and the haying work is being carried out slowly. The farms in Bazskiy, Dzhalsalkudukskiy, Gizhduvanskiy, Kaganskiy, Karakulskiy, Zarbdarskiy, Kitabskiy, Kokdalinskiy, Usman-Yuspovski, Yakkabagskiy and a number of other rayons have not as yet completed their second cutting of alfalfa.

According to data supplied by the Central Statistical Administration for the Uzbek SSR, by 25 June 1,871,000 tons of coarse feed had been procured, including 771,000 tons of hay and 862,000 tons of haylage. Against a requirement of 16-18 quintals of feed units of coarse and succulent feed per standard head of cattle, only 3.1 quintals were procured.

Here is how the feed procurement tasks are being fulfilled by the kolkhozes and state farms.

Procured in percentages of the task: (1st column -- coarse feed; second -- hay; third -- feed units per standard head).

Kara-Kalpak ASSR	6	13	0.8
Andizhan Oblast	26	25	2.7
Bukhara Oblast	8	12	1.2
Dzhizak Oblast	17	33	3.2
Kashka-Darya Oblast	24	34	3.5

(Table continued...)

Navoi Oblast	15	17	1.2
Namangan Oblast	28	31	3.6
Samarkand Oblast	28	36	3.8
Surkhan-Darya Oblast	31	24	4.5
Syr-Darya Oblast	26	38	5.5
Tashkent Oblast	35	30	5.9
Fergana Oblast	25	22	3.0
Khorezm Oblast	11	18	1.6

The procurement rates are still low. Compared to last week, when the increase in forage in Tashkent and Kashka-Darya oblasts amounted to more than 50,000 tons, in the Kara-Kalpak ASSR and in Bukhara, Syr-Darya, Fergana and Khorezm oblasts -- 6,000-15,000 tons.

The reason for the low feed procurement rates -- slow haying operations and this has already resulted in the loss of one alfalfa cutting. For example, of 32,200 hectares of alfalfa in Samarkand Oblast, a second cutting has been obtained from an area of 20,400 hectares -- 52 percent; over the past week 24 percent of the alfalfa was cut down and in Bulungurskiy, Urgutskiy, Bolshevikskiy, Payarykskiy and Kattakurganskiy rayons a second cutting was carried out on only 10-38 percent of the areas and during the week the increase amounted to only 6-15 percent. The haying work must not be carried out at such rates. This leads to a shortfall in a large quantity of feed and to a reduction in the quality of that feed.

The production of vitamin grass feed has not been organized in a satisfactory manner and this is especially true in Syr-Darya, Andizhan, Kashka-Darya, Khorezm and a number of other oblasts and also in the Kara-Kalpak ASSR. All of the AVM /forced ventilation machine/ units must be placed in operation during the next few days. A reliable production line for the delivery of the raw materials -- alfalfa, common reeds, coarse-stalk grass and so forth -- must be created in order to ensure their highly productive utilization.

The majority of the farms have commenced their grain harvest work. All of the straw must be collected and all losses, misappropriation or squandering of the straw must be eliminated.

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## LIVESTOCK FEED PROCUREMENT

### TURKMEN FEED PROCUREMENT LAGGING

Ashkhabad TURKMENSKAYA ISKRA in Russian 24 Jun 84 p 1

/Article: "To Accelerate the Procurement of Feed"

/Text/ By the end of the second 10 day period in June, only the farms in Mary Oblast had completed their second cutting of alfalfa. In Ashkhabad and Chardzhou oblasts, a second cutting of sown grasses has been taken only from 60 percent of the area and in Krasnovodsk Oblast -- from 40 percent. The first cutting has yet to be completed in Tashauz Oblast.

For the republic as a whole, 157,500 tons of hay have been procured. This is 17.4 percent of the task. Moreover, less hay has been placed in stacks than was the case by this same time last year.

The slow rates for the green harvest are the result of poor equipment usage and large amounts of equipment idle time. Another reason -- the untimely tending of mown alfalfa plants.

Alfalfa plants are a source for accumulating not only hay but also haylage. But with the exception of farms in Ashkhabad Oblast, which as early as May over-fulfilled the plan for preparing it with their first cutting, this type of feed is being laid away for the winter in a very slow manner. Thus, in Tashauz and Chardzhou oblasts the plan for laying in haylage has been fulfilled by less than 40 percent.

In Mary and Chardzhou oblasts the plan for preparing vitamin-grass meal was over-fulfilled. However, the principal supplier of it -- the Tedzhen Inter-rayon Association for Providing Services for Distant Animal Husbandry Operations -- did not carry out its obligations. Of 7,000 tons of meal which should be prepared in the republic, 6,500 tons should be provided by the Tedzhen Association of Goskomsel'khoztekhnika for the Turkmen SSR.

Unfortunately, its collective has still not achieved the required work tempo. The plan has been fulfilled by roughly one third.

On a considerable portion of the pastures the vegetation is scanty and in some areas it is lacking entirely. Thus it is very important at the present time to devote more attention to the procurement of coarse feed and to delivering it to the livestock wintering areas. But this work is being carried out very slowly.

Against a plan calling for 945,000 tons of coarse feed, 76,600 tons have been procured throughout the republic. The situation is especially poor in Krasnovodsk Oblast with regard to the creation of winter supplies; here the task has been fulfilled by only 5 percent, in Mary Oblast -- by 6 and in Ashkhabad Oblast -- by 8.5 percent.

The urgent task of the day -- to intensify the procurement of all types of feed at the kolkhozes and sovkhoses and to do everything possible to ensure fulfillment of the weekly tasks.

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## LIVESTOCK FEED PROCUREMENT

### LOW FEED PROCUREMENT RATES SCORED

Ashkhabad TURKMENSKAYA ISKRA in Russian 20 Jul 84 p 1

/Article: "To Value Highly a Summer Day"/

/Text/ The mowing of alfalfa has been in progress for 3 months now and the forage supplies are accumulating very slowly. According to data supplied by the Central Statistical Administration for the Turkmen SSR, approximately 317,000 tons of hay, or 35 percent of the annual task, had been accumulated by 16 July. The procurement rates are lower than those for last year. This testifies to the fact that the leaders of a number of kolkhozes, sovkhozes, RAPO's /rayon agroindustrial associations/ and rayon party committees are not devoting proper attention to this important work.

The situation in Tashauz and Mary oblasts, where the indicators for fulfilling the annual task are lower than the republic's average indicators, is arousing special alarm. A third cutting of alfalfa is nearing completion on farms in Mary Oblast. However, of the 245,000 tons called for, only 85,400 tons have been placed in storage.

Even less hay has been laid away on farms in Tashauz Oblast. True, last week an increase took place here in the hay procurement rates.

The remaining oblasts did not carry out their weekly tasks for feed procurements. The work tempo on farms in Ashkhabad and Chardzhou oblasts fell sharply. For the republic as a whole, hay procurements during the week were 16,000 tons less than the figure called for.

Reductions took place in the rates for accumulating coarse feed. During the week a smaller quantity was placed in storage than the figure for the previous week. The worst work was performed by the brigades in Mary Oblast, which fulfilled their task by less than 40 percent. Meanwhile, the farms in this oblast had the greatest number of sheep and the largest requirement for coarse feed. Less than 20 percent of the amount required was placed in storage for the winter.

The course of the coarse feed procurement work is arousing concern. Of 945,000 tons available on farms throughout the republic, the farms have been credited with only 227,000 tons -- less than one fourth.

The second half of the summer is at hand. Less and less time remains. Thus, maximum benefit must be derived from each summer day out on the alfalfa fields and in the coarse feed procurement areas. A reliable supply of forage must be obtained for each farm.

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## LIVESTOCK FEED PROCUREMENT

### BRIEFS

**FEED PROCUREMENT PROBLEM** -- Extremely difficult and prolonged work is continuing in Turkmenistan -- the procurement of feed. Alfalfa is being cut down for a green top dressing and hay for vitamin-grass meal and coarse feed is being laid away. The feed procurement brigades are competing to carry out successfully their raised tasks and to create a strong feed base for the farms. The work carried out by the feed procurement specialists in Ashkhabad and Chardzhou oblasts in procuring alfalfa hay testifies to the fact that the lag can be overcome. However, this does not hold true for the kolkhozes and sovkhoses in Mary and Tashauz oblasts. Almost no increase has taken place here in the alfalfa mowing rates. The farms in Mary Oblast fulfilled their weekly task by 64.5 percent and in Tashauz Oblast -- by 36 percent. The republic's shortfall in hay during the week amounted to 13,000 tons. The workers in some rayons succeeded in raising sharply their procurements of coarse feed and straw. The kolkhozes in Serakhskiy Rayon distinguished themselves by fulfilling their weekly task by 233 percent, Ashkhabad Oblast -- by 186 and in Chardzhou Oblast -- by almost 112 percent. But a majority of the rayons did not cope with their task. The procurements of coarse feed in Tedzhenskiy, Charshanginskiy and Dargan-Atinskiy rayons were organized in an especially poor manner. Such situations cannot be tolerated. Each farm must have a firm feed base. It must be created on a daily basis, with neither days nor hours being lost during the feed procurement period. Time lost can never be recaptured. /Text/ /Ashkhabad  
TURKMENSKAYA ISKRA in Russian 12 Jul 84 p 1/ 7026

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## REGIONAL DEVELOPMENT

### BELORUSSIAN DECREE ON PRIVATE PLOT, SUBSIDIARY FARM DEVELOPMENT

Minsk SEL'SKAYA GAZETA in Russian 23 Jun 84 p 1

[Decree of the Belorussian SSR Supreme Soviet of 21 June 1984: "On the Work of the Soviets of People's Deputies, Ministries and Departments of the Republic on the Development of the Private Plots of Citizens and the Subsidiary Farms of Enterprises, Organizations and Institutions"]

[Text] The Supreme Soviet of the Belorussian Soviet Socialist Republic notes that the working people of the Belorussian SSR, as all the Soviet people, are persistently implementing the decisions of the 26th CPSU Congress, the subsequent plenums of the party Central Committee, the instructions and recommendations, which are contained in the speeches of General Secretary of the CPSU Central Committee and Chairman of the Presidium of the USSR Supreme Soviet Comrade K. U. Chernenko.

Having heard the report of Comrade G. G. Kovalenko, deputy chairman of the Commission for Questions of the Agro-Industrial Complex of the Presidium of the Belorussian SSR Council of Ministers, on the work of the soviets of people's deputies, ministries and departments of the republic on the development of the private plots of citizens and the subsidiary farms of enterprises, organizations and institutions and the coreport of the Agriculture Commission of the Belorussian SSR Supreme Soviet, the Belorussian SSR Supreme Soviet establishes that the soviets of people's deputies of the republic are performing constant purposeful work on the search for and use of the available reserves of the increase of the production of agricultural products and are making a significant contribution to the fulfillment of the assignments which were set by the Food Program.

Devoting much attention to social production at kolkhozes and sovkhoses--the main source of the increase of the production of agricultural products--the local soviets of people's deputies in conformity with the decisions of the Food Program and the requirements of Decree No 27 of the CPSU Central Committee and the USSR Council of Ministers of 8 January 1981, "On Additional Measures on the Increase of the Production of Agricultural Products on the Private Plots of Citizens," are performing considerable work on the development of the private plots of citizens and the subsidiary farms of enterprises, organizations and institutions, which, being an additional source of the production of food products, are retaining great economic, social, moral, psychological and educational importance and are increasing the level of marketability of social production.

The executive committees of the local soviets of people's deputies are elaborating and implementing measures on the provision of assistance to citizens and the creation of more favorable conditions for the working of private plots. The system of contractual interrelations of citizens with kolkhozes, sovkhoses and procurement organizations has undergone extensive dissemination. The course of the fulfillment of these measures and the results of the work are being systematically examined at the sessions of the soviets and the meetings of their executive committees, the conferences of workers of soviet organs and farm managers and the meetings of citizens at the place of residence. These questions have been examined more than once by the Presidium of the Belorussian SSR Supreme Soviet and the Belorussian SSR Council of Ministers, a number of enforceable enactments have been adopted.

The private plots of citizens have 600,000 hectares of plowland, 32 percent of the cows, 33 percent of the hogs and 42 percent of the sheep and goats of their total number in the republic are in their possession. In 1983 more than 2,000 cows, 42,000 head of young large-horned cattle, 714,000 piglets and more than 12 million young fowl were sold by kolkhozes and sovkhoses to the population. More than 500 bee packets, 5,000 queen bees, up to 100 tons of honeycomb foundation and the necessary implements are sold annually to amateur beekeepers. Planting stock of fruit and berry crops is being allocated, assistance is being given in the acquisition of high-grade seeds of potatoes, grain crops and perennial grasses. The veterinary and zootechnic service of animals has been organized. Steps are being taken on the provision of livestock with fodders and pastures. More than a ton of hay and 500 kg of straw were allocated per cow for the 1983-1984 winter period; 330,000 tons of mixed fodders were sold.

Some 57,000 hectares of farmlands have been attached to the subsidiary farms of enterprises, organizations and institutions, 35,000 head of large-horned cattle, 103,000 hogs, 36,000 fowl and 34,000 rabbits are kept on them.

The work, which is being performed by the local soviets of people's deputies and their organs, on the development of the private plots of citizens and the subsidiary farms of enterprises, organizations and institutions is favorably affecting the results of the activity of these farms and the increase of their contribution to the accomplishment of the Food Program.

In many rayons the decline of the animal population on the farms of citizens has been halted, the production of livestock products has increased on the majority, in all rayons the procurements of milk have increased and in the majority the procurements of meat have increased. In 1983 344,600 tons of livestock and poultry in live weight, 748,600 tons of milk, 109,600 tons of potatoes, 2,400 tons of vegetables, 134,000 tons of fruits and berries, 894 quintals of wool and 1,371,000 rabbit skins were sold to the state and consumer cooperatives, including selling on the market. The subsidiary farms of enterprises, organizations and institutions sold 24,000 tons of livestock and poultry and produced 18,000 tons of milk and 8,000 tons of vegetables. More than 8,000 tons of fruits and berries and over 28,000 tons of potatoes and vegetables were produced by horticultural and gardening associations.

At the same time the work, which is being performed by the local soviets of people's deputies, ministries and departments, on the increase of the

production of agricultural products on the private plots of citizens and the subsidiary farms of enterprises, organizations and institutions does not fully meet the requirements of the May and November (1982) CPSU Central Committee Plenums, Decree No 27 of the CPSU Central Committee and the USSR Council of Ministers of 8 January 1981 and other decisions of the party and government on these questions.

In a number of executive committees of the soviets of people's deputies, ministries and departments, kolkhozes and sovkhoses they are underestimating this important reserve of the increase of food resources; the available possibilities of increasing the population of productive livestock and boosting the production of agricultural products are being inadequately utilized.

Cases, when individual soviets of people's deputies, their organs and managers of kolkhozes and sovkhoses are insufficiently concerned about the creation of favorable conditions for the keeping of livestock by each family, which lives in rural areas, continue to occur. The need of the population for the acquisition of cows and heifers, piglets, young fowl, high-grade seeds and planting stock is not being completely met. Not everything is being done on the complete supply of private livestock with fodders and the attachment of pastures for long periods, the organizational questions of the grazing of livestock are not being worked on everywhere, the agronomic and veterinary service of the private plots of the population and the subsidiary farms of enterprises, organizations and institutions has not been fully ensured.

Inadequate concern about the supply of the population with agricultural implements, means of the small-scale mechanization of operations, chemical compounds and toxic chemicals for the treatment of plantings and construction materials is being displayed by the enterprises of the Belorussian SSR Ministry of Local Industry, the Belorussian SSR State Committee for the Supply of Production Equipment for Agriculture and consumer cooperatives. Implement rental centers have not been organized.

Cases of red tape on the part of procurement organizations in case of purchases from the population of surpluses of agricultural products, the failure to observe contractual obligations and untimely settlement with suppliers are being permitted.

The executive committees of local soviets of people's deputies, ministries and departments and the managers of enterprises, organizations and institutions are utilizing far from completely the possibilities for the improvement of the public dining of workers and employees by means of the production of agricultural products at subsidiary farms. At the majority of these farms the productivity of livestock is low, the expenditures of fodders and labor are unjustifiably great, the cost of the output being produced is high, the assignments on the production of output are not being fulfilled. The questions of the allocation to subsidiary farms of capital investments, construction materials and equipment are not being settled. Agricultural organs are giving them inadequate assistance with seeds, planting stock, livestock and organic fertilizers.

The Supreme Soviet of the Belorussian Soviet Socialist Republic RESOLVES :

1. The local soviets of people's deputies of the Belorussian SSR, ministries and departments and managers of enterprises, organizations and institutions are to eliminate immediately the shortcomings noted in the decree; are to take exhaustive steps on the fulfillment of the decisions of the party and government on questions of the increase of the production of agricultural products on the private plots of citizens and the subsidiary farms of enterprises, organizations and institutions; are to ensure the necessary explanatory and organizing work so that every family in the countryside would have a private plot (garden) and would raise livestock and poultry on its farm.

To ensure the formation in 1984-1985 of subsidiary farms attached to every enterprise and organization with more than 500 workers and on a cooperative basis at other enterprises and organizations.

2. The Belorussian SSR Council of Ministers, the Commission for Questions of the Agro-Industrial Complex of the Presidium of the Belorussian SSR Council of Ministers, the oblast and rayon soviets of people's deputies and their agro-industrial associations are to implement additional measures on the improvement of the conditions of the keeping of the private plots of citizens and on the maximum meeting of the needs of the population for the provision with young agricultural animals, fodders and pastures, high-grade seeds and planting stocks, are to improve agronomic and veterinary service, are to give practical assistance to the subsidiary farms of enterprises, organizations and institutions in the efficient conducting of farming and animal husbandry and are to carry out the technological monitoring of their activity.

The Belorussian SSR State Planning Committee, the Belorussian SSR State Committee for Material and Technical Supply, the Belorussian SSR State Committee for the Supply of Production Equipment for Agriculture, the Belorussian SSR Ministry of Agriculture and the executive committees of the oblast soviets of people's deputies are to supply the subsidiary farms of enterprises, organizations and institutions more completely with material and technical resources.

3. The local soviets of people's deputies are to tighten up the monitoring of the observance of the contractual interrelations of citizens with kolkhozes, sovkhoses and procurement organizations. To take steps on the supply of the population with agricultural implements, means of the small-scale mechanization of operations, chemical compounds for the treatment of plantings and construction materials.

4. The Belorussian SSR Union of Consumers' Societies, the Belorussian SSR Ministry of Trade, the Belorussian SSR Ministry of the Fruit and Vegetable Industry and the Belorussian SSR Ministry of the Food Industry are to constantly improve procurement activity and trade in the agricultural products, which are purchased from the population, having devoted particular attention to the expansion of the network of procurement centers and market trade, the storage of products and the timely payment of suppliers for the products which are purchased in accordance with a contract.

5. The executive committees of the local soviets of people's deputies, ministries and departments are to tighten up the supervision and monitoring of the activity of enterprises, organizations and institutions on the development of



subsidiary farms, are to systematically submit these questions for the consideration of the soviets, executive committees, permanent commissions, collegiums of ministries and departments, are to generalize and disseminate the gained positive experience and are to strive persistently for the fulfillment of the set assignments on the production of milk, meat and other agricultural products.

6. The Belorussian SSR Council of Ministers is charged to examine the suggestions and remarks, which were made at the session by the Agriculture Commission and the deputies of the Belorussian SSR Supreme Soviet, and to adopt the corresponding decisions on them.

Chairman of the Presidium of the Belorussian SSR  
Supreme Soviet I. Polyakov

Secretary of the Presidium of the Belorussian SSR  
Supreme Soviet Ye. Chagina

21 June 1984. Minsk.

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CSO: 1824/530

## AGRO-ECONOMICS AND ORGANIZATION

### GOSPLAN OFFICIAL ASSESSES FOOD PROGRAM IMPLEMENTATION

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 5, May 84 pp 62-69

[Article by G. Rudenko, department director of the USSR Gosplan: "Following the Course of the May (1982) CPSU Central Committee Plenum"]

[Text] The resolution of the December (1983) CPSU Central Committee Plenum points out the need to increase constantly the efforts of the workers in the agroindustrial complex [APK] directed toward implementing the USSR Food Program and to increasing the yield of the fields and the productivity of animal husbandry, and it indicates the need to utilize more efficiently the resources for developing agriculture.

The past year 1983 was, in essence, the first full fiscal year in the course of which all APK units actively worked to implement the goals established by the May (1982) CPSU Central Committee Plenum. The tasks contained in the country's Food Program were included in the State plans for the economic and social development of the USSR in 1983 and 1984.

In 1983, new normative documents were adopted for implementation that foresee improvement in planning and material and technical supply in the APK system, in the economic interrelationships of agriculture with other sectors of the national economy, in wages and economic incentives to labor and in other factors. Purchase prices were raised for basic agricultural products and markups on these prices were introduced for kolkhozes and sovkhoses operating under worse natural and economic conditions. The administration of the APK was reorganized and social construction is being conducted on a large scale.

All of this created the economic, organizational and moral-psychological conditions for increasing the level of management at kolkhozes and sovkhoses. In response to the concern of the Communist Party, rural workers increased their labor activity and the search for unused reserves for the purpose of raising the level of organization and effectiveness of labor.

Despite weather conditions in 1983 that were unfavorable for agriculture, its overall gross output amounted to R133.8 billion, which is 5 percent more than in 1982. The entire increment was achieved through increased labor productivity. The economy of the farms was strengthened, their profits increased to R23.3 billion and the overall level of profitability reached 21 percent.

All ministries and departments, both those supplying agriculture with the means of production and those processing agricultural output, overfulfilled the annual plan for the volume of output sold and for the rate of growth of production and labor productivity.

The results achieved in agriculture and in the branches of the processing industry permitted an improved supply of food products to the population. The sale of meat, meat products and whole-milk products in state and cooperative trade increased by 5 percent, that of animal oil by 10 percent, cheese by 9 percent, vegetable oil by 4 percent, potatoes by 7 percent, vegetables by 6 percent and fruits and citrus products by 18 percent. The farms of most Union republics, ASSR's, krays and oblasts fulfilled the plan for the sale of grain to the State. State grain resources are fully providing for an uninterrupted supply of bread and bread products to the country's population. For the year, per-capita consumption of the most valuable products increased, including meat by 2 kg, milk by 10 kg and 6 more eggs were consumed.

Favorable tendencies were noted in the area of intensification of animal husbandry, where most of the additional output occurred through increased animal productivity. On public farms, the average milk yield per cow increased by 7 percent, egg-laying of hens by 1 percent and the average daily weight gain of fattening cattle increased by 5 percent. That of hogs went up 4 percent. For livestock, there was an increase in the average weight per head that amounted to 3 percent for cattle and 4 percent for hogs. Fodder expenditures per unit of production declined somewhat.

A start was made for further increasing the output of animal husbandry products. At the beginning of this year, there were 2.2 million more head of cattle, 1.8 million more hogs, 2.9 million more sheep and goats and 20 million more head of poultry. Feed supplies increased by 7 percent and by 4 percent per standard head of livestock.

The tendency to reduce the amount of livestock and production in animal husbandry on the private plots of the population was overcome. In this sector, as on the subsidiary farms of industrial, construction and other enterprises, they have begun to obtain more agricultural output.

The incorporation of up-to-date methods involving a more intensive processing of raw materials in animal husbandry in many enterprises of the meat and dairy industry has contributed to increasing final output. There has thus been a wider application of the technology for separating meat remains from bones using the method of pressing and of the use of protein supplements in making sausage products and milk whey for industrial processing, etc. "The main thing right now," pointed out Comrade K.U. Chernenko, general secretary of the CPSU Central Committee, "in conforming to the decisions of the 26th Party Congress and the CPSU Central Committee Plenums, is to consolidate and add to the positive changes in all spheres of public life."<sup>1</sup> In working to carry out the planned goals, it is particularly important to stress concrete actions,

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1. PRAVDA, 15 February 1984.

striving for realistic and important results. "It is precisely here," emphasized Comrade K.U. Chernenko, "that the Party will value the maturity of leading personnel, the work of the labor collectives and the achievements of the republics, oblasts and all sectors of our country's national economy."<sup>2</sup>

Owing to the firm and consistent course of the Party and State in the investment policy of recent years, a powerful production potential has been created in agriculture and related sectors of the national economy. The work to consolidate the material and technical base of the APK continues today in accordance with the goals of the country's Food Program.

In 1983, capital investment in the APK, including branches that supply agriculture with the means of production, increased by 5 percent over 1982 and amounted to more than R48 billion, including R40 billion in agriculture. Compared to 1980, fixed production capital in agriculture increased by 21 percent, deliveries of fertilizers went up 20 percent and energy capacities were 16 percent greater.

Animal-husbandry structures, mechanized farms and complexes were constructed to accommodate 7.7 million head of livestock and 13.1 million head of poultry. Also constructed were poultry factories for 4.6 million laying hens and an annual production of 82 million birds for meat, silage and haylage structures with a capacity of 32 million cubic meters, elevators, mixed-feed enterprises and other projects. 710,000 hectares of irrigated and 725,000 hectares of drained lands went into operation and 4 million hectares of pastures were irrigated. Capacities were put into use for the production of granulated sugar, confectionery, meat and whole-milk products, cheese, etc.

In the branches that provide agriculture with the means of production, capacities were put into operation for producing mineral fertilizers and the raw materials for them, agricultural machines and their replacement parts, machinery and equipment for animal husbandry and fodder production, and fodder yeast.

Agriculture was supplied with 372,000 tractors with a total capacity of 31 million horsepower, 116,000 grain-harvesting and 1,700 corn-harvesting combines, 9,900 cotton harvesters, 34,000 press-sorters, 15,000 irrigating machines and installations, 4,600 mower-crushers, 3,100 hay choppers and much other equipment. It received (in terms of 100-percent nutritive substances) 23 million tons of mineral fertilizers, or 2.8 million tons more than in 1982, and 675,000 tons of chemical feed supplements, or 65,000 tons more. The plan for deliveries of equipment, mineral fertilizers and chemical feed supplements was basically fulfilled.

There was continued movement to zone farming systems, which give the largest yield per unit of area. Industrial technologies and efficient means of cultivating the soil were introduced. The material and technical base of agriculture was supplemented through new and highly productive types of machinery and equipment, and effective fertilizers and toxic chemicals were

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2. Ibid.

used. In 1983, 60 percent of the areas sown in corn and soybeans for grain were cultivated using industrial methods (without the use of manual labor), as was almost half of the area in sugar beets and one-fourth of the area in sunflowers.

Along with consolidation of the material and technical basis in the production sphere, nonproduction construction is taking place on a large scale and the service sphere is expanding. In 1983, the volume of everyday personal services rendered to the population in rural areas increased by 6.9 percent over 1982. A total of 33 million square meters of housing was constructed here, as were general-education schools for 509,000 students and preschool institutions for 188,000 children. In 1984 and the following years, nonproduction construction will be developed at an accelerated rate.

All of this creates favorable conditions for increasing the effectiveness of agriculture and the related APK branches. To a considerable degree, success is determined by how directly land, equipment, fertilizers and other resources are utilized on the farms. It is essential above all to concentrate the efforts of the APK administrative organs at all levels and of each labor collective on the efficient use of the enormous production potential already in existence.

Considerable work is being done in this direction in many rayons of Belgorod, Bryansk, Orel, Omsk, Ivanov-Frankovsk and Minsk oblasts, as well as in Stravropol Stravropol'skiy Kray, the Bashkirya ASSR, etc. Here there is an increase in production per unit of land area, fixed production capital and ton of fertilizer used and there is an increase in labor productivity.

There are, however, a number of farms, rayons and oblasts where expenditures to create the material and technical basis of production are not giving the proper yield. Some examples are Altay and Krasnoyarsk krays and Penza, Tambov, Kaluga, Pskov and other oblasts. Some kolkhozes and sovkhozes did not fulfill the plan for the sale of output to the State, even though they were fully supplied with material and technical resources.

It happens that farms spend large sums to acquire new equipment although for various reasons the existing equipment is used significantly less than foreseen by the established norms. Many administrators live according to the principle "better too much than too little" and invariably take everything that is offered. As a result, unneeded expenditures do not pay off through output and the enterprises fall into economic difficulties.

Now, when the plans for material and technical supply and for the rendering of services are drawn up based on consumer orders and are reviewed by the RAPO [rayon agroindustrial association] council, the rational distribution and utilization of material and technical resources has become a realistic possibility.

A greater and greater role in increasing agricultural output is being played by the use of chemicals and by land improvement. For this year's harvest alone, it is planned to apply more than 970 million tons of organic and 23



million tons of mineral fertilizers. The effectiveness of their use, however, is still below the standard, with the exception of individual farms and rayons. It is known that the use of fertilizers and plant-protection substances gives a better yield on improved lands, and it is therefore essential that fertilizers mainly be applied there. Priority should be given to those fields where agricultural crops will be cultivated using industrial methods.

Without diminishing the importance of large-scale projects to develop new irrigation and drainage systems with the introduction of large land masses into use, it is nevertheless proper to pay more attention to the so-called small land improvement, to a significant expansion in technical crop work and to the reconstruction and repair of existing irrigation and drainage systems. Less capital-intensive, these measures, as experience shows, give a rapid and high yield in the form of additional output.

One of the most difficult problems to solve that directly influence the efficiency of the functioning of the APK is the problem of reducing losses of agricultural raw materials and finished products at all stages of the production cycle, from the field and farm to the consumer. Resolving this problem demands the implementation of a broad complex of measures, including the construction of roads and the supplying with special transport means, packaging materials, capacities for processing raw materials, and storage facilities.

In accordance with the Food Program, considerable work is being done in this direction. The Five-Year Plan and the annual plans for economic and social development foresee the allocation of capital investment on a priority basis to develop the production infrastructure and capacities for processing agricultural raw materials. However, the actual use of the limits of capital investment and the bringing into operation and assimilation of capacities do not correspond to APK requirements. Thus the degree to which the plan for putting capacities into operation was fulfilled in 1983 was as follows: processing sugar beets, 21 percent; processing grapes, 73 percent; storage capacities for potatoes, vegetables and fruits, 80 percent; elevators, 76 percent; silage and haylage structures, 48 percent; capacities for canning vegetables and fruits, 60 percent; meat, 62.9 percent; whole-milk products, 89.9 percent; cheese, 79.6 percent; etc.

The main reason for these indicators is that the operations of construction organizations are not evaluated by project for the entire list of capacities that are planned to be put into operation but for the overall volume of construction work and commodity construction output. Such a system makes it possible to cover the nonfulfillment of the plan for small APK projects through large projects, especially since they, as a rule, are not constructed in a remote rural area but under more favorable urban conditions.

An effective system seems to be one where construction organizations (above all their managers) would, in the event that they do not fulfill the plan for introducing projects foreseen by the country's Food Program, regardless of

their size, not only be deprived of their bonuses for fulfilling the plan in regard to the overall volume of work completed but would also be made responsible morally and administratively.

At the same time, it is essential to improve planning, which means giving more consideration to the size of processing enterprises and storage facilities and to distributing them in accordance with the development of the raw materials basis, the road and transportation network and other factors.

In the processing branches of industry, the concentration of production was not always well-founded from the point of view of national economic efficiency. Enterprises were basically located in large cities and were seldom established in the immediate vicinity of agricultural activity. For example, in recent years in the system of the USSR Ministry of Procurement, the total volume of grain storage facilities practically satisfied the demand. However, in a number of large grain-producing oblasts, such as Orenburg, Kustanay, Aktyubinsk, Kherson, Volgograd, Saratov and several other oblasts, a shortage of capacity for storing State grain resources continues to be felt. For this reason, millions of tons of grain are stored in bales every year under the State procurement system. The construction of small-capacity grain receiving centers in remote regions was not properly developed.

Inadequate measures are being taken to eliminate the disproportion between the production of sugar beets and the industrial capacities processing it. Thus, when the harvest is good in the UkSSR, it takes as long as 150 days to process the beets. At the same time in Cherkassy Oblast, 10 of 23 sugar plants are inadequately supplied with raw materials compared with 9 of 39 in Vinnitsa Oblasts, 4 of 17 in Sumy Oblast, 4 of 6 in Rovno Oblast, 3 of 5 in Orel Oblast and 2 of 6 plants in Zhitomir Oblast. In the country as a whole, in the second half year for the last 3 years, 86 to 88 percent of the capacity of sugar plants was utilized. At the same time, the transportation system was not used efficiently. About 45 percent of purchased beets in the country are transported more than 50 km, which leads to great losses.

In the winemaking industry, there is a shortage of production capacities in the AzSSR, the MSSR and in individual winegrowing regions of the RSFSR and the UkSSR. In a number of cases here, the grapes are transported 40 km or more for processing.

The USSR Ministry of the Meat and Dairy Industry and the councils of ministers of the RSFSR, the UkSSR, the MSSR and several other Union republics are not taking steps to eliminate the discrepancy in the size of purchases of livestock and poultry by the production capacities of the meat industry, which leads to significant losses of meat when livestock is held too long during the more intensive periods of procurement and when it is transported to other regions of the country.

Because of the irrational distribution of dairy enterprises in a number of regions of the European part of the USSR, in the KaSSR and in the republics of Central Asia, a shortage has developed in the capacities for whole-milk

production. The elimination of many milk receiving centers in the system of the USSR Ministry of the Meat and Dairy Industry in the 10th Five-Year Plan led to a significant lengthening of the routes for milk deliveries, which has a negative influence on its quality.

At the present time, there is a noticeable tendency for existing capacities not to be used fully but the ministries and departments continue to demand additional capital investment for the creation of new capacities and for the introduction of new equipment for these capacities.

For example, in the canning industry in 1982, 52 to 53 percent of the meat-canning capacity was used, but nevertheless an additional capacity for 125 million standard cans was created. There was an increase of 34.9 million standard cans in the milk-canning capacity even though only 59.1 percent of the existing capacity was utilized. In the canning of fruits and vegetables, there is a continuous process of modernization, closing of obsolete enterprises and replacing them with new and up-to-date ones, at the same time that 78 percent of their capacity is used, compared to 37 percent in the production of dried fruits and potatoes.

One of the reasons for this situation is the shortage of tin cans and glass containers. The corresponding industry branches are still not fulfilling the tasks of the Food Program to provide the APK with packaging materials, which leads to large losses of agricultural raw materials and commercial shortages in output needed by the population.

The resolving of the problem of developing and using a system of storage facilities is very important for improving the preservation and quality of agricultural production (especially fruits and vegetables and potatoes). At the beginning of the 11th Five-Year Plan, capacities for storing fruit, vegetables and potatoes were not fully provided for. The Food Program foresaw an accelerated rate of construction of storage projects in APK branches. This task, however, is being resolved slowly.

One of the ways to accelerate the construction of storage facilities is to perfect their industrial production from light metallic structures, the installation of which requires half the usual time. The resolution of this question, however, has been delayed. Interested ministries and departments must accelerate their planning and the perfecting of experimental models so that the series production of vegetable storage facilities can begin in 1985 or 1986.

The planning of the introduction of storage facilities into operation is also in need of improvement. In our view, it is expedient to plan their introduction for the season of meat deliveries and the processing of agricultural production rather than at the end of the year. Because of departmental separation, existing refrigerators for fruit and vegetables are not being fully used.

It is thought that it is necessary to give the councils of the agroindustrial associations of rayons, oblasts, krays and autonomous republics the right to

carry out the management and coordination of the placing and use of various storage facilities independently of departmental affiliation. There should also be expanded interbranch cooperation in the construction and operation of storage facilities. This will permit more effective use of allocated funds for these purposes and greater flexibility in improving the load of existing storage facilities throughout the year.

The transition to the direct receipt of output at the kolkhozes and sovkhoses and its removal from the farms using the transport means of procurement organizations contributes to improving the preservation and quality of output. This task, however, is being resolved slowly. Thus in 1982, only 17 percent of the total volume of purchases at livestock kolkhozes and sovkhoses were received there. It was 25 percent for milk, 18 percent for potatoes and 27 percent for vegetables and grapes. To improve this work, it is essential to raise the organizing role of rayon, oblast, kray and republic (ASSR) agroindustrial associations. Even now, the existence of transport means with the proper organization of their use makes possible a doubling of the share of output received directly at the farms and its centralized shipment by procurement organizations.

Improvement in the preservation and quality of feeds and a reduction in their losses are an enormous reserve for increasing APK efficiency. As early as in the next few years, the measures now being adopted will make it possible to satisfy in full the requirements of kolkhozes and sovkhoses for capacities to store silage and haylage and will also greatly improve the conditions for storing grass meal, briquetted and granulated mixed feeds and root crops. Along with practicing strict control over the implementation of the specified program for the creation of feed storehouses, it is necessary to seek additional possibilities at the kolkhozes and sovkhoses themselves for expanding their construction and also to increase significantly deliveries to the farms of various sorts of preservatives, films and other materials necessary to conserve feed by industry enterprises. Mixed feeds of industrial production must have the proper packaging that protects against the loss of the nutritive quality of feeds throughout their entire transportation process. It is expedient to expand the use of straw on farms and to increase its nutritive value through the adding of yeast, treatment with chemical reagents and other methods.

Taken as a whole, the solution to the feed problem depends to a considerable degree on feeds being balanced in regard to protein and other elements. For this purpose, a system of measures has been worked out with a determination of concrete periods and agents, including both agriculture itself as well as the enterprises and organizations of the APK and other sectors of the national economy. The corresponding subsections of the USSR Gosplan, the ministries and departments, territorial administrative organs and also all interested enterprises and organizations should reflect these measures in their planned goals, providing for a complete supplying with material and technical resources. In this regard, much depends upon on-site organizational work. For example, the level of technical equipping of farms located in soil and climate zones



favorable for the cultivation of protein-rich crops permits them to satisfy the demand for these resources through their own production.

Thus the kolkhoz "40 let Oktyabrya" in Taldy-Kurgan Oblast in Kazakhstan, typical for its level of material and technical equipment, has for many years consecutively been obtaining large and stable harvests of corn grain. Under the unfavorable weather conditions of 1983, the kolkhoz, owing to the skill, the good state of organization and the high level of work performed in accordance with the technology of cultivation, harvested 72.5 quintals of grain per hectare, thereby meeting its own grain needs and selling 72,000 tons to the State. Similar results are achieved by many farms, brigades and production teams in other regions of the country as well. There are, however, still a number of farms in analogous zones of Kazakhstan, Central Asia, the northern Caucasus, the Don, Kuban' and the southern Ukraine that obtain a yield of corn grain only 40 to 50 percent as great. The same thing can be said about the legume crops. Every farm must do a better job of revealing and utilizing internal reserves.

The high level of development of agricultural production is the general result of management. It is achieved where there is a truly authoritative approach to the use of land, water, equipment, fertilizer, seed and feed--all types of resources without exception. The transition of the economy to an intensive course of development means above all that more and better-quality output must be obtained from each unit of resources.

The thorough justification of economic expediency must become the unquestionable rule in making any economic decision. It is just as in an analysis of the economic operations of enterprises and their individual production units, where it is not proper to limit oneself to a mere evaluation of the quantitative growth of output. The center of attention should be the indicators for growth in labor productivity and for the reduction in the cost of production. An increase in the profitability for the enterprise or for individual products through an increase in purchase prices cannot be considered to be a positive managerial result.

The goal of the incorporation of true cost accounting is not the fulfillment of the output plan at any cost but precisely based on a constant comparison of expenditures with production results at the same time that diligence is encouraged and mismanagement and waste are penalized economically. At the same time, the demands of the new administrative organs at all levels improved planning and increased control over the implementation of planned goals and standards for saving resources in accordance with the education and improvement of qualifications of personnel.

As was emphasized at the All-Union Economic Conference on APK Problems, the decisions of the May (1982) CPSU Central Committee Plenum and the Food Program adopted there marked a qualitatively new stage in the agrarian policy of the Party and they acted as a powerful stimulus in the consolidation of the country's agroindustrial potential, leading to noticeable progress in farming and animal husbandry. Concrete facts were mentioned that had a beneficial effect on the development of new methods of managing the agrarian sector and of improving its economic mechanism. The economic indicators of enterprises were improved and the rate of rural social reform was accelerated.



## AGRO-ECONOMICS AND ORGANIZATION

### PURCHASE, SALE OF TAJIK PEOPLE'S AGRICULTURAL SURPLUSES

Dushanbe SEL'SKOYE KHOZYAYSTVO TADZHIKISTANA in Russian No 2, Feb 84 pp 20-22

[Article by Candidate of Economic Sciences I. U. Usmanov: "Purchase from the Population and Sale of Surpluses of Agricultural Production"]

[Text] In the present stage of the building of communism, one of the important problems stemming from the general heading of the party toward increasing the people's well-being is improving the population's supply of high quality food products in a wide variety. The consumer cooperative, which is the connecting link between cooperative trading and farming, plays a large part in the solution to this problem. An important component of its activity is the purchase of agricultural production surpluses from kolkhozes, sovkhoses and the population.

The republic's consumer cooperative annually increases the purchase of meat, milk, egg and vegetable surpluses. In 1983 more than 63,000 tons of agricultural production surpluses, valued at 39 million rubles, were purchased from kolkhozes, sovkhoses and the population by cooperative organizations. Within the overall volume of purchases, 30 percent was of vegetables, about 20 percent of melons, over 13 percent of meat and meat products, up to 11 percent of potatoes, 10.2 percent of dried fruits, 30 percent of honey, 2 percent of various groats and about 5 percent of other agricultural products. By comparison with the year 1981, this is 12 percent more. Of the total amount of money received from the selling of agricultural production surpluses, the share of Leninabad Oblast is 46.8 percent, that of Kurgan-Tyube Oblast 12.5 percent, that of Kulyab Oblast 6.4 percent, that of Gorno-Badakhshan Autonomous Oblast 1.7 percent and that of rayons subordinate to the republic 32.6 percent.

The organization of trade in agricultural production surpluses is being improved constantly. Thus, at the present time, consumer unions of Khodzentskiy, Tursunzadevskiy, Gissarskiy, Leninskiy and Ordzhonikidzeabadskiy rayons have standardized procurement centers, and trading enterprises for the retail sale of agricultural production surpluses. The urban cooperative trading organizations of these consumer unions operate essentially at a profit. The volume of sales of agricultural production surpluses in 1983, as compared to 1981, increased by 14.3 percent.

However, such is by no means the case everywhere. In the cooperative organizations of Ayninskiy, Zafarobodskiy, Kanibadamskiy, Fayzabadskiy and other rayons the proper material and technical foundation for trade still is lacking; and here wild fruits, berries and medicinal herbs are not fully involved in exchange, and losses are tolerated in purchases, shipping, storage and processing of agricultural products. It is not surprising that these cooperative businesses did not fulfill the plan for sale of agricultural production surpluses in 1983.

In the 11th five-year plan, an increase in purchases of agricultural product surpluses from the population, kolkhozes and sovkhoses over and above the state plan, at prices according to agreement, is foreseen by decrees of the 10th Congress of Tajik SSR Consumer Cooperatives in the following quantities: Meat and meat products, up to 9,000 tons; milk, 200 tons; eggs, 1.4 million each; vegetables, 25,000 tons; potatoes, 6,000 tons; fresh fruits, 4,000 tons; melons, 12,000 tons; grapes, 900 tons; dried fruits, 14,000 tons; various groats, 3,200 tons; honey, 2,000 tons; nuts, 170 tons; and wild rose hips, 60 tons. It is proposed to reach a procurement turnover approaching 43 million rubles by the end of 1985; that is, to effect an increase of 10 percent by comparison with 1983.

This task can be accomplished on the basis of implementing a set of measures for improving the organization of procurements. In the republic, at the end of 1983, 441,100 families of peasants had personal garden plots on land accountable to kolkhozes, sovkhoses and other state enterprises at their disposal. The overall land area of these plots was approximately 33,660 hectares. On the secondary personal farms of kolkhoz farmers, sovkhos workers and employees, cattle number 678,500 head, lesser livestock 1,347,900 head, and there are a kolkhoz family from its secondary personal farm averages about 900 rubles per year. Consumer cooperative associations must facilitate increasing the production volumes of agricultural products on secondary personal farms by providing assistance as follows: In the selection of seed varieties; in the slaughter of livestock at livestock slaughtering centers, in the population's acquiring purebred cows, hogs, chickens, ducks, and rabbits; in the processing of vegetables, fruits and potatoes for the market; in the sorting and packaging of agricultural produce in standard containers, and so on.

Expanding the sale by consumer cooperatives to secondary farm possessors of tools and equipment, the demand for which is constantly growing, has great importance also. The crux of the matter is that kolkhozes and sovkhoses presently are not in a position fully to provide equipment service for the secondary farms, even though such a task has been set before them. Complete satisfaction of this requirement of the population depends, in the main, upon industrial production; but, at the same time, it depends as well upon the ability of cooperatives to organize trade in orchard and garden commodities, and upon output volumes of household items at the cooperative industrial enterprises of the Tajik Union of Consumer Societies system themselves.

One of the most important problems of cooperative organizations in increasing the purchases of agricultural product surpluses from the population is that of expanding the network of standard receiving and stockpiling points and stores which can ensure the uninterrupted acceptance and sale of agricultural product surpluses. In solving this problem, the local organs of power in every region of the republic must grant the necessary land areas for building stores and stockpiling points to regional stockpiling offices, and must mobilize sovkhoses and kolkhoses for providing help in constructing the trading and stockpiling network. The development of this network is the more important because it will lead to reducing the time spent by inhabitants of regional centers and populated points in obtaining foodstuffs and to increasing their free time, and it will create extensive opportunities for their taking interest in producing for the public and developing their secondary personal farms. For the cooperative organizations, this will create conditions for engaging in active forms of purchasing agricultural production surpluses from the population (Making the rounds of households and going around farms regularly, counter selling of concentrated feeds and scarce industrial goods, making contracts, giving out monetary advances of up to 50 percent of the contract total for livestock production and up to 30 percent for crop production), and for the immediate sale of young stock animals and poultry to those rural families which make contracts for the sale of meat to consumer cooperatives.

Thus, kolkhoses and sovkhoses must provide assistance to cooperative organizations in strengthening and developing the material base for procurement, and must extend transport and other services to them.

For fulfillment of the food program, the economic forms of linkage between cooperative trading and kolkhoses should be improved even further, the purchases and sales of agricultural production surpluses of the population should be planned as an integral part of the agro-industrial complex, and the functioning of the consumer cooperative should be evaluated from the standpoint of shortening as much as possible the time being spent by the rural population on the sale of these surpluses and its receipt of services for the development of secondary personal farms.

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APPLICATION OF SCIENCE TO MAJOR PROBLEMS OF AGRICULTURE

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 2, Feb 84 pp 68-73

[Article by Ye. Khlebutin, main administration chief, USSR Ministry of Agriculture, correspondent member, VASKhNIL [All Union Academy of Agricultural Sciences imeni V. I. Lenin]: "Scientific Support for the Food Program"]

[Text] The decisions of the 26th CPSU Congress, the May and November (1982) and the June (1983) CPSU Central Committee plena outlined and are being used to implement measures directed at accelerating the growth rates of livestock and poultry product output and improving agriculture's stability and efficiency. This is the basis for substantial improvements in the country's supply of food-stuffs and other agricultural products and for opening broad possibilities for the social reconstruction of the countryside.

Under these conditions there are increased requirements upon agricultural science and an enhanced role and responsibility for scientific collectives and each scientist.

At present there are 1,017 scientific institutions subordinate to USSR Minsel'khoz [USSR Ministry of Agriculture], USSR Minplodoovoshchkhov, USSR Minvodkhoz [Ministry of Land Reclamation and Water Resources] and USSR Goskomsel'khoztekhnika. The main forces of agricultural science are concentrated in the USSR Minsel'khoz system. It is in charge of 867 institutions, including 242 institutes, 165 experimental stations and 105 VUZ's, where 2,419 doctors and 33,040 candidates of science work.

In cooperation with scientists of the USSR Academy of Sciences, this large scientific work group, which is growing quantitatively and qualitatively from year to year, is entrusted with basic and applied research along the entire front of contemporary scientific knowledge supporting technical and economic progress in agriculture. A central place belongs to agronomic science -- about the land (soil), crop plants and their interaction with the environment.

The tasks of sciences studying soils and land include the search for ways to the rational use and expanded reproduction of agricultural land fertility in face of their increasingly intensified use in specific natural and economic conditions. Population growth and the development of industry, roads and socialist construction are reducing the country's arable land per capita. Between 1965 and 1983 it declined from 0.97 to 0.84 hectares. This tendency is continuing, in spite of very active work to bring new lands into agricultural



use and the decisive struggle against excessive withdrawals of land for nonagricultural needs.

The situation is made more difficult by unfavorable natural factors -- insufficient moisture and frequent droughts in the majority of the country's agricultural regions. The protection of land from wind and water erosion is an urgent problem.

Scientific institutions have studied the condition of the country's land resources. This work is continuously being improved, it has been put on a planned basis and is conducted on every farm and field. Tillage technology has been created for all zones. Its use helps preserve soil moisture, prevent erosion and simultaneously obtain high and stable yields of all crops.

Based on scientific data, diverse new tillage methods have been developed. They are based both on the traditional (plow) technology, turning over the top layer, and upon non-moldboard methods. At present ever greater acceptance is being given to the surface, minimum tillage of fields. This is already practiced on 45 million hectares.

Scientific work on the efficient use of land resources is also used in planning and designing industrial and social-service construction, the location of agricultural settlements and in infrastructure development. However, science lags behind farms' needs for solutions to a number of scientific and practical problems in agriculture.

The most urgent task of this science is to make research on agriculture in zones of insufficient and irregular moisture more thorough and specific to local conditions in order to intensify such operations. The efforts of several generations of the country's scientists have created a theory of drought counteraction. It makes provisions for the widespread development of irrigation, the development of drought resistant varieties of plants, and the introduction of comprehensive, interrelated agrotechnical measures for the accumulation and economical use of natural moisture resources (such as setting aside the optimal amount of fallow and properly maintaining it, using moisture conserving tillage and crop management methods, the flexible use of crops, varieties and planting times and heavy applications of organic fertilizers).

The problem of ensuring greater stability in yields has not only technical, but also socio-economic aspects. Even during the harshest droughts, well laid out and modern equipped farms with skillful agronomic services can obtain yields which, though reduced, are sufficient for meeting state obligations and do not have a major impact on the economy in the following year.

Stable increases in land productivity are to an ever greater extent linked to land reclamation and improvement. Scientific institutions of this type are actively assisting water resource organizations in the development of modern equipment and reclamation installations, in the organization of their efficient operation and in the development of progressive, water conserving irrigation conditions. Land reclamation workers are developing measures for using irrigated and drained lands, effectively mastering systems of irrigated



agriculture and raising predictably high yields. However, workers in USSR Minvudkhov reclamation management organs and enterprises must overcome departmental conservatism and prevent errors in land reclamation such as has happened in some sections of the Non-chernozem zone.

The main task of science is to increase crop yields per hectare of irrigated land to 3 fold that of nonirrigated land, subsequently raising it to the levels of farms, brigades and links which consistently obtain (per hectare) 80 - 100 quintals of grain corn, 100 of rice, 700 of produce, 150 - 200 of alfalfa hay and 600 - 800 quintals of corn silage. In 1984 it is planned to sharply expand (to 3.2 million hectares) the programmed yield production of these crops on irrigated land.

The improvement of plants through the creation of ever more effective varieties and hybrids is an important direction of scientific activity. The work of selection science has been stepped up through the deepening of basic knowledge, improvements in method and a strengthened material base for research. Selection has become a specialized service performing complicated functions to improve varietal resources and expand and renew the initial seed stock.

Scientific institutions of this type (and above all the 52 selection stations specialized by crops which were set up in the early 1970's in the appropriate regions) are striving to meet production needs as well as possible.

They are more completely meeting the demands made upon new varieties by agricultural organizations, kolkhozes and sovkhozes. These demands are: under actual growing conditions exceed their predecessors with respect to potential yields, resistance to diseases and predators, response to basic intensification factors, suitability for industrial methods, etc. Selection institutions are taking additional measures in directions such as breeding plants for comprehensive immunity, quick ripening and drought resistance. Work has speeded up on crops in which there had been lagging in varietal support -- grain and pulses, grasses, soybeans, rape, vegetables.

Shortcomings in selection science and its lagging in some areas are of special concern to VASKhNIL and the appropriate units of union and republic agriculture ministries. At the same time, the existing arsenal of varieties and hybrids makes it possible for kolkhozes and sovkhozes to substantially increase the yields of all crops. The massive experience of progressive farms is evidence of this. For the current five-year plan scientific institutions received the target of transferring about 2,000 new varieties to production. It was, for the most part, fulfilled.

The improvement of agrochemical methods of increasing agricultural production is a very important task for science. Agrochemical science has proposed the production of practically proven methods of efficiently using chemicals for all natural zones, sectors and economic conditions.

A network of specialized scientific institutions for soil and agrochemical studies. Jointly with agrochemical service enterprises they have worked out

recommendations for the efficient use of various forms of mineral fertilizers (base, micro, liquid, granulated, etc.), soil conditioners (lime, gypsum, peat) and organic fertilizers (manure, compost, urban wastes, etc.).

Norms have been established for fertilizer and pesticide applications using various crop raising systems and equipment. Methods for their rational use and safety rules have also been developed.

These provide the essential scientific and methodological prerequisites for the long term expansion of the use of chemicals in agriculture.

The development of methods for protecting plants from diseases, pests and weeds is becoming increasingly important at the present stage of agricultural intensification. Scientists at VASKhNIL, sector scientific research institutes and VUZ's have put together more than 40 integrated protection systems for wheat, corn, rice, cotton, oil, fodder, fruit, berry and vegetable crops.

Scientific institutions are constantly improving methods for intensification, for determining pest populations and fighting them. They are more accurately defining the biological threshold of damage and developing more economical norms for pesticide applications.

Every year there are expanded scales in the use of biological methods for protecting plants from disease, pests and weeds, as such methods are the most effective, rapid and high payoff method for increasing the land's productivity. The efforts of scientific institutions are directed towards improving integrated systems in light of contemporary achievements of biology and chemistry, towards organizing their effective use at experimental-production and base farms and training kolkhoz and sovkhos specialists in the subtleties of their practical use in specific production conditions.

However, scientific institutions cannot always promptly give specific advice on the use of chemicals in agriculture to farms supplied with such chemicals to varying degrees. It has become especially urgent to work out scientific and production methods for the economical use of fertilizers. This includes: root zone, local, band, trickle and other types of applications, using inhibitors, biological nitrogen and other agents.

However, farms' requests for mineral fertilizer deliveries are not always completely met, there are complaints about quality and nutrient content ratios. There is an especially acutely felt shortage of phosphorus, limited assortment of pesticides and shortfalls of other materials essential for comprehensive chemicalization (preservatives, plastic items, etc.).

Scientifically based agricultural systems have been developed for the country's main zones. These systems apply the latest knowledge and progressive experience in the most effective use of natural and production potential. They have become the scientific basis for current and long term planning for the development of cropping and production as a whole in oblasts, rayons, farms and their subdivisions.

These systems have been modified for irrigated and drained land, for various levels of chemical use intended for industrial technology and programed yields. Complexes of measures known as the "Barayev System" and "Mal'tsev System" have received widespread dissemination. Also of scientific and practical interest are the developments known as the "dryland agriculture system (Stavropol)", the "contour agriculture system (Altay)", the "adaptive agriculture system (Moldavia)" and the Omsk agrosystems.

They all, either completely or their individual components, are directed towards stable and high quality crop growing. They are being actively mastered in a planned manner at kolkhozes and sovkhoses, with consideration given to actual economic conditions. There are thousands of farms where specialists, in cooperation with scientists are attaining land productivity at levels twice to three fold the average and on a par with world achievements in comparable natural conditions.

The basic path in the development of animal husbandry is its intensification and conversion to industrial methods. It is essential here to improve the scientific-methodological level and efficiency of selection and breeding work, improve agricultural production technology, increase its volume per hectare, head of livestock or feed unit. The country has created a diverse network of institutions for animal husbandry and veterinary science which are working on methods for increasing the production and improving the quality of meat, milk, eggs, wool and hides and are creating new highly productive breeds, breeding groups, lines, hybrids and crosses suitable for industrial techniques under various conditions for animal husbandry operations.

Practically all livestock in the public sector are pedigreed. A state program has been set up for their long term systematic and directed improvement. It foresees the further improvement of their genetic traits for productivity and adaptation to industrial technology and better facilities. Science has created 38 lines of various breeds of dairy cattle, 25 of meat cattle; 2 breeds and 4 types of swine; 5 breeds and 15 type of sheep and 30 breeds and 20 lines and crosses of poultry. All of them have good production qualities making possible substantial improvements in the economic indicators of the corresponding sectors. The systematic work of agricultural organs, kolkhoz and sovkhos specialists and zootechnical science have made it possible to improve the genetic potential of all species of animals. In cattle raising indicators of 3,000 - 3,500 tons of milk per cow annually and 1,000 g daily weight gain have been reached.

The achievements of Soviet animal breeders are to a great extent due to the broad, planned use of large scale selection. It is the comprehensive combination of the newest methods and the principles of classical selection, as well as the achievements of modern areas of zootechnical knowledge and population genetics, the biology of reproduction and the use of mathematical methods in planning the reproduction of breeding livestock.

Progressive methods of large scale selection in livestock raising were first introduced by Baltic republic agricultural organs and the scientific institutions working under their management. In Latvia great results were obtained by

scientists at the All Union Order of the Red Banner Scientific Research Institute for Animal Husbandry (VIZh) and the Latvian Scientific Research Institute for Animal Husbandry and Veterinary Science (in Sigulda), which created the Seleks (Selection - Economics -- System). It has already been functioning for 10 years, during which time the genetic potential of the republic's livestock has risen to 4,000 - 4,500 kg of milk per cow.

The reproductive period of outstanding cows has been extended through the removal of early embryos, their prolonged storage and subsequent transplantation. New genetic engineering approaches are being developed for breeding highly productive animals appropriate to the conditions of the continuous intensification and industrialization of agricultural production.

While devoting primary attention to the creation of a selection and genetic reserve, science is also working on other directions for improving animal husbandry.

The necessity of intensifying all sectors of animal husbandry and the increasing potentials for their industrialization are presenting new scientific and practical problems for the efficient utilization of existing breeds of cattle under the new conditions for keeping and feeding them.

The planned development of the basic problems in the theory and practice of animal husbandry intensification has made it possible for zootechnicians, veterinarians, engineers and economists to jointly create industrial technologies for producing milk, meat and eggs. The center of scientific effort is now shifting from problems in the construction of animal husbandry complexes and bringing them up to planned capacity towards practical tasks in the intensification of animal husbandry on all farms.

An important factor here is assuring the health of herds at farms and especially at industrial type enterprises. The improvement of existing and the creation of new methods in prophylaxis and the struggle against diseases are, as a consequence of the reduction of wastes and improvements in animal health, helping to obtain additional output and improve its quality. The development and implementation, jointly with zootechnical scientists, of a set of measures to reduce barrenness of bearing age female animals remains an urgent task of veterinary science.

For many years now the biggest bottleneck in the fulfillment of animal product production plans has been the shortage of feeds. This problem is made more serious by poor quality feeds. These bottlenecks in feed supply should be eliminated primarily by farms themselves and by agricultural organs, following the example of progressive enterprises, which have organized efficient feed production on arable and natural pasture land and have prepared the necessary quantities of feeds, balanced with respect to proteins and carotene, and which are an optimal combination of coarse, succulent and concentrated types. Animal husbandry at such farms is characterized by high productivity and good profitability. As a rule, such farms are better supplied with feed preparation and other equipment and chemicals, have well developed irrigation and better organized feed production on arable and pasture land. Feed storage is also well organized, making use of preservatives, active ventilation, plastic films and high quality storage facilities. The same is true of feed preparation and feeding operations.



Scientific institutions involved in feed supply problems are now working on the targets of the country's Food Program. This program foresees the creation and introduction of technology for producing high quality feeds from natural pastures and cropland capable of obtaining 10,000 - 15,000 feed units per irrigated hectare and 5,000 - 6,000 feed units per nonirrigated hectare and processes for preserving green fodder which will retain at least 90 percent of its nutrients.

The protein problem has a special place in feed supply. The main ways for eliminating this shortage are: increasing the density of grass plantings (especially alfalfa and clover), expanding the production of pulse and oilseed crops, the industrialization of inter-planting [soyeseyaniye] and the commercial planting of rape. It is also intended to increase protein production by the microbiological industry and increase the production capacity for meat and bone meal, whole milk substitutes, etc.

Science should also give more attention to solving urgent techno-economic problems such as the proportions and regionalization of the main breeds of livestock, increasing the hybrid herd, improving and expanding artificial insemination, etc.

Scientific institutions are not yet giving production operations enough recommendations for optimizing animal feeding systems based primarily on coarse and succulent feeds produced by the farm itself, they have not implemented them on kolkhozes and sovkhoses, under specific conditions and for different years. Neither have they introduced effective new methods for preserving green fodder, using modern plastic films, progressive methods for storing hay, haylage and root and tuber crops, methods for the economical use of concentrates and mixed feeds and substitutes.

In the final account the activities of agricultural scientists and specialists should be directed towards the development and mastery of scientifically based systems of animal and crop raising which will be implemented in the current and future five-year plans by kolkhozes and sovkhoses through increased energy availability, comprehensive mechanization of all agricultural sectors and improvements in equipment quality and adaptability to various natural and production conditions. This will be assisted by a system of machinery developed for the period up to 1990 which includes more than 3,500 types, more than half of which is being series produced by industry.

The USSR Minsel'khos system includes 17 scientific research institutes for the mechanization and electrification of agriculture. Such departments have been created at many sector and zonal scientific research institutes. There are also independent design offices and experimental plants involved in improving existing machinery systems, compiling qualified instructions to industry for manufacturing essential types of equipment, control over its quality, and substantiating efficient methods for its operation.

However, industry is still not supplying agriculture with a number of essential machines (highly productive grain and forage harvesters, improved sets of machinery for tillage which protects the soil, for the application of fertilizers and pesticides, transport equipment with improved off-road capabilities, new row crop tractors, etc). It is also increasingly urgent to have standardized parts and components and to produce multipurpose machinery and units. Organizing the production of many working components and some types of relatively simple machinery at scientific production associations is a substantial reserve for this.

It is important to improve equipment quality for all parameters: productivity, economy, reliability and longevity. Kolkhozes and sovkhozes justifiably complain to industry about equipment quality: in their turn, machinery builders are making requirements to related sectors and suppliers of metals, plastics, paints, machine tools, etc. A solution to many problems in agricultural mechanization, electrification and automation through the joint efforts of USSR Minsel'khoz, Minsel'khoz mashina [Ministry of Tractor and Agricultural Machine Building], VASKhNIL and the USSR Academy of Sciences will strengthen the material-technical base of agricultural production.

The party and state are exerting every effort to accelerate agriculture's mechanization, automation and electrification. In combination with measures to bring order into reclamation, improve the use of chemicals and general agroeconomic support, this will create the material basis for accelerating the rates of its dynamic development.

The country has an broad mass movement for converting agriculture to industrial methods of animal husbandry; experience has been acquired in comprehensively mechanizing the production of grain, feeds and industrial crops; mechanized and extensively automated dairy farms, swine enterprises, poultry factories, hot-house complexes and elevators have been built.

The area planted to crops raised by industrial methods is expanding rapidly in the 11th Five-Year Plan. Using modern means of production, based on scientific recommendations and working under collective contract, progressive workers in all zones in the country are obtaining yields and labor productivity at the best world levels. Industrial technology is used to raise an ever broader assortment of crops. It is already used on tens of [millions?] of hectares of cereal crops, 3.5 million hectares of corn, 2.1 million of sugar beets, 1.7 million of sunflowers, the entire area devoted to soybeans (900 hectares), 250,000 hectares of fibre flax and a considerable share of cotton.

There are various modifications of such technologies. For example, the All Union Order of the Red Banner Scientific Research Institute for Corn (Dnepropetrovsk, USSR) has conducted experimental research on 11 variants (using imported and domestic equipment, various types of herbicides, and agro-technical methods of fighting weeds and pests, etc).

Scientific institutions should promptly summarize experience in the use of industrial technology and make it the property of all farms.

The search for ways and means of accelerating agriculture to intensive methods, based on considerable improvements in the use of the economic potential created at each farm is becoming a very important direction in agrarian science. Use is made of forms for the organization of production and labor which bring the greatest results and assure the maximum personal interest of each worker in honest work and initiative.

Based upon the progressive experience of better farms and using models of farm operating systems for specific natural and economic zones, scientists should work out the scientific and methodological foundations for efficient production organization at enterprises, rayons and oblasts using existing resources and calculated for growing levels of resources. There should be strengthened research on improving the efficiency of using basic productive resources, especially scarce ones (equipment, chemicals, petroleum products, mixed feeds), the rationalization of labor organization and improvements in planning and managing farm economy activities.

New possibilities are opening up for agrarian science with respect to many problems in agricultural production management, especially in assuring independence for enterprise managers and specialists, creating conditions for the general implementation of effective cost accounting, improving economic services in the countryside and developing businesslike and enterprising attitudes and economic thinking among workers at all levels. It is advisable to use systems analysis and computers to dialectically evaluate the state of agricultural production.

Basic and exploratory research is under way on the most promising directions of scientific and technical progress: genetic engineering, molecular biology, immunity, photosynthesis, nitrogen fixation and urgent engineering, economic and other problems. However, a large part of scientific potential is oriented towards applied research and the large scale introduction of completed developments into kolkhoz and sovkhoz operations. This is being done by agricultural organs and scientific institutions on the basis of coordinated plans and practical interaction with production.

Scientific institutions are actively participating in the introduction of new developments and bearing responsibility for their speed, quality and suitability for implementation under real production conditions, for qualified production testing, prompt approval at scientific and technical councils and for introduction at their base farms. Designers supervision is being implemented.

The main work on the production introduction of scientific and technical achievements and progressive experience is conducted by kolkhoz and sovkhoz specialists. At present there more than 1.8 million such people. Each farm has up to 40 credentialed agronomists, zootechnicians, economists and engineers.

The establishment of conditions for specialists' creative activities and use of cost accounting in the countryside are reserves for accelerating the introduction of scientific and technical achievements into agriculture.

There are many scientific research institutes and experimental stations fruitfully supporting production with scientific work. For example, the activities of the All Union Scientific Research and Technological Institute for Poultry Raising are highly valued by production workers. Under the management of Ptitseprom [The Poultry Industry] it is completely and promptly meeting the sector's requirements for systematic increases in its productivity and efficiency up to the levels of contemporary possibilities and the better world achievements. The institute is effectively working on poultry hybrids and crosses, on improving engineering standards, modernizing the existing material base and on technological and organizational methods for accelerating the growth in labor productivity at all enterprises.

The scientific-production association (NPO) is the most effective form for the introduction of innovations and the improvement of production's scientific and technical levels. The USSR Minsel'khoz system now has 35 such associations and an equal number in the formation stage.

The establishment of oblast and rayon agro-industrial associations is creating more favorable conditions for all on-site organizational work to introduce science, technology and progressive experience. This work is generally directed towards the comprehensive use of all potentials for improving production's technical and economic level in directions and forms defined by scientifically based systems for crop raising, animal husbandry and farm operations.

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## AGRICULTURAL MACHINERY AND EQUIPMENT

### MINISTER EXPLAINS FEATURES OF EXHIBIT EQUIPMENT

Moscow TRAKTORY I SEL'KHOZMASHINY in Russian No 5, May 84 pp 5-8

[Article by K.N. Belyak, USSR minister of machine building for animal husbandry and fodder production: "Machines and Equipment for Animal Husbandry and Fodder Production at the Exhibition 'Sel'khoztekhnika-84'"]

[Text] The 26th Party Congress and the following CPSU Central Committee Plenums have established large and responsible tasks for the sector of machine building for animal husbandry and fodder production. With the goal of the successful realization of the Food Program, the tasks were made concrete in the resolution adopted by the CPSU Central Committee and the USSR Council of Ministers "on measures to increase further the technical level and quality of machines and equipment for agriculture, to improve utilization and to increase their production and deliveries in the years 1983 through 1990."

By the end of the 1980's, the sector will have to carry out a systematic transition to the production and delivery of complete sets of machines and industrial lines that guarantee the full mechanization of basic and auxiliary work in animal husbandry and fodder production. In the current Five-Year Plan, it is planned to provide for the production of machines and equipment to form 133 complete technological sets.

In putting into operation a system of machines, production created and assimilated more than 200 new machines and equipment items of various designations during the 10th Five-Year Plan. During the first 3 years of the current Five-Year Plan, 95 new and modernized machines were brought into production.

Today machine building for animal husbandry and fodder production is one of the intensively developing sectors of the national economy. There are 11 industry scientific-research, planning and technological institutes and their affiliates, 20 design organizations and 121 industrial enterprises engaged in the creation and production of machinery in the industry.

From the time of the exhibition "Sel'khoztekhnika-78", machinery for animal husbandry and fodder production has undergone a change in quality. Machines

and equipment produced by industry enterprises have become more reliable and durable in work, their specific materials and energy intensiveness is less, their productivity and service life are greater, and they provide better working conditions for machine operators and animal breeders. High-power motorized machinery began to be introduced on an ever-larger scale and many operations and technological processes were automated.

Particular attention is being paid to the creation of combined machines that perform several operations and that are suitable for use in various soil and climate zones of the country. Such reserves exist in many machine groups. Their utilization is one of the main tasks for design organizations and industry enterprises during the current Five-Year Plan.

Standardization is one of the means of reducing the large number of makes of machines and equipment for a particular purpose, especially in animal husbandry. Work in this direction for fodder distributors, several types of belted and other conveyors, bunkers, dosing devices, fodder haulers, manure removal equipment and other types of equipment will make it possible to increase the machine workload during the year and to utilize more efficiently the production capacities of plants.

An important place in accelerating scientific-technical progress in the industry is assigned to standardization of the design of machines and equipment as well as machine units, junctions and components for the purpose of shortening the time needed for the creation and assimilation of new and modernized equipment, improving quality and reliability, and expanding the level of specialization and cooperation in production. The industry has already undergone the transition to the formation of highly standardized families of machines with the following base models: fodder-harvesting combines, mowing machines, trailer capacities, machine units for preparing grass meal, milking installations, stall equipment, cage equipment for livestock and poultry, and equipment for maintaining a microclimate. The level of standardization within families of machines of the same type is 65 to 92 percent.

In recent years, a substantial reduction was achieved in the diversity of models of machine units, junctions and components of general application and their specialized production was organized. There is in the industry an operating system of quality control of production, which has been introduced at more than 90 enterprises. There are 60,000 people working in the system of defect-free production. The number working under selfcontrol with a personal brand exceeds 5,000.

At the international exhibition "Sel'khoztekhnika-84," the industry is demonstrating its extensive products list of machines and equipment. Among the exhibits is the motorized fodder-harvesting combine KSK-100 and its new modifications, a new trailer unit for tractors of the MTZ type and the fodder-harvesting combine KPI-2.4 (being demonstrated for the first time), which is replacing the mower-shredder KUF-1.8. Fodder-harvesting combines

are noted for high productivity and outstanding universality. They are used in procuring shredded mass for silage, haylage and grass meal. Motorized combines are equipped with a hitch for attaching transport capacities. For hauling shredded mass, there is a demonstration of a family of new highly-universal transport means with capacities of 15, 20 and 40 cubic meters (instead of the PSE trailers with a volume of 12.5 cubic meters), increasing the efficiency of the use of fodder-harvesting combines.

For grass mowing, the exhibition included a presentation of the motorized mower-flattener KPS-5G and its new modification, which possesses increased terrain mobility and great maneuverability. The mechanization of both mowers permits the use of reapers that reduce the labor expenditure in harvesting grain. For procuring dry hay, a highly productive set of machines is produced (sorter-stack former SPT-60, trailer stack mover SP-60), which reduces the labor expenditure to 40 percent of the previous level. The machine set is being used successfully in gathering straw.

One of the progressive methods for the production of fodder from grass is the procurement of hay and straw in large rolls. Besides the series model PRP-1.6, the exhibition included a presentation of the new press-sorter PRP-750. Its design permits the formation of rolls with a mass of up to 750 kg. Included in the set of machines, along with the press-sorter, are the necessary PPU-0.5 for loading rolls and the roll shredder IRT-165. At the request of consumers, all sets of hay-harvesting machinery are equipped with rakes and rakes-turners of various designs.

The demonstration of machines and equipment for distributing fodder occupied a large place in the exhibition program of the Soviet section. The product list is expanding constantly and the production volume of fodder distributors is increasing. Series machines are being improved.

The high concentration of livestock and the application of shift-flow line technology for handling livestock almost exclude interruptions in the utilization of machines and equipment in the course of the day. This increase demands on reliability for individual machines as well as for the entire equipment of flow lines and complete sets of industrial machines. The basic mobile fodder distributors, the volume of the body has been increased, permitting them to be used more efficiently when distributing succulent green fodder, especially in fattening young cattle.

The trailer feed mixers-distributors RSP-10 have proven themselves in recent years. They have found wide application at fattening grounds and small animal-husbandry farms, where it is not practical to have a feed shop. The first industrial series of the vehicular ARS-10 mixer-distributor has been issued. The machines are being used in all zones of the country at farms and complexes with various methods of feeding livestock. Newly created and modernized models meet the highest quality categories.

The mechanization and automation of cow milking remains a very significant problem in the dairy industry. Actual models and their parts are familiarizing visitors with the achievements in the area of milking technology.

Industry plants are issuing a family of milking installations with an internal standardization of 90 to 92 percent. They provide for mechanized milking in the milking rooms and stalls of cowsheds for any means of keeping livestock. With the help of the UDA-8 and UDA-16 automated milking installations, the machine milking operator milks 60 to 75 cows per hour. At these installations, the preparatory and finishing operations, including the preparation of the udder, the distribution of concentrated feed, the conclusion of machine milking and the removal of the milking apparatus, are fully automated. The AID-1 machine unit is issued for milking cows at subsidiary farms and private plots.

One of the directions for obtaining milk of guaranteed quality is the creation of a complete set of equipment, including centrifugal purifiers, pasteurizers, thin-layered thinly laminated continuous flow refrigerators and packing and packaging machines that make it possible to preserve the organoleptic and nutritive qualities of milk while it is being obtained and processed. To solve these problems, for the first time in the country, they have begun large-series production of RPO-2.5 reservoir milk refrigerators, the service life of which has been increased to 12 years. The production of reservoir refrigerators with direct refrigeration of milk is being worked out.

The technical level of equipment for manure removal is being raised. Modernization has been completed for the basic TSN-160 manure-removal conveyor, with the 16X80mm chain being replaced by a 14X80mm chain. Its metal-intensiveness has been reduced and it can be mounted in manure channels instead of the TSN-3.0B conveyor.

Production is being increased for the fundamentally new UTN-10 stationary installation for the transport by pipe line of manure from the site of animal husbandry to manure storage facilities. Its productivity will double as a result of the modernization.

Also on display at the exhibition is the OST-F-32 equipment, recommended for production and intended for transporting calves from the calving section, maintaining them in individual cages and fattening with milk. There is approximately 75 percent standardization in the assembly units and components, the labor input for cleaning and servicing the cages has been reduced, the system for dosing and warming the milk has been simplified, and the metal-intensiveness has been reduced by 15 percent.

Being demonstrated are various complete sets of industrial equipment for mechanizing processes in the raising and fattening of sheep under various systems of keeping them and types of feeding.

The exhibition has a substantially new display of machines for mechanizing hog-raising complexes and farms. For complexes with 24,000 head of swine, they are offering the OKS-1000 feed distributor, which replaced the stationary



feed distributor of the type OSO-2400. The new mobile electrified feed distributor KSP-0.8 is efficient. The technology for removing manure at hog farms has been improved. The large-load machines ASP-15, ESK-F-15 and ASP-25 were created for fodder hauling.

The sets of equipment that the industry is furnishing for poultry raising provide for full mechanization of all processes at poultry factories and farms. Poultry factories are being provided with equipment sets with new cage batteries for raising laying hens (BKN-3), replacement chicks (BKM-3) and broilers on the ground and for keeping female flocks of ducks and geese. Equipment is also being produced for raising turkeys. All sets are delivered to the customer with equipment for the receipt, storage and transporting of feed, as well as for manure removal, and they also come with automatic-control devices.

New IKP-90 "Kavkaz" incubators for large numbers of eggs are characterized by low labor input and by an up-to-date system of control and automation of the incubation regimes. The exhibition includes demonstrations of the LOYa-7.2 and LOYa-4 automated lines for processing eggs at the egg storehouses of specialized farms and large-scale poultry factories.

As before, equipment for applying organic fertilizer is well represented at the "Sel'khoztekhnika-84" exhibition. For the first time, new MZhT-10 and MZhT-16 machine models are being demonstrated. The PRT-10 and PRT-16 machines for applying solid manure have been subjected to fundamental modernization. Their reliability and durability were increased by improving the design of their running gear, distribution mechanism and other machinery. The newly created MTT-23 and MZhT-23 machines for applying solid and liquid organic fertilizers (used with the K-700 tractors) are distinguished by a high carrying capacity. Their specific pressure on the soil was reduced through the positioning of arched wideprofile tires.

This is by no means a complete list of the machines and equipment being produced and demonstrated by industry enterprises. Exhibition visitors are familiarizing themselves with machines for loading organic fertilizers and fodder onto transport facilities, with fodder-preparing machinery and with new equipment for supplying heat to animal-husbandry farms.

There is no doubt that the "Sel'khoztekhnika-84" international specialized exhibition will strengthen the ties of machine builders with agricultural workers and will be a new stimulus in the organization and development of mutually advantageous scientific-technical and commercial contacts between participating countries.

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## TILLING AND CROPPING TECHNOLOGY

### TWO SOUTHERN UKRAINE OBLASTS PREPARE FOR GREATER CORN HARVESTS

Kiev PRAVDA UKRAINY in Russian 4 May 84 p 3

[Article by PRAVDA UKRAINY correspondents V. Mishchenko and A. Rekubratskiy: "Update on the Initiators and their Neighbors"; passages rendered in all capital letters printed in boldface in the source]

[Text] CORN

As we know, the farmers of the Dnepropetrovsk area have resolved to attain a corn harvest this year of up to one million tons. This initiative has been actively supported by grain growers in many oblasts of the republic, who have expanded the effort to achieve maximal harvest levels of this important feed-grain crop. Not ones to be left on the sidelines are the Zaporozhye growers--neighbors and long-time competition rivals of the Dnepropetrovsk farmers. Their target for this year is 700-800,000 tons of corn. Exactly how things are progressing for the corn growers of these oblasts is reported below.

#### DNEPROPETROVSK OBLAST

Farmers of the oblast have adequately prepared themselves for the planting now in progress. A determination was made to raise the entire seed corn crop, and 30 percent of the silage crop, under industrial methodology. The equipment is in an unprecedented state of readiness. The tractor crews have passed a practical course in the operation of mechanized planters and equipment for preparing and applying herbicides. Each of them has been issued a special certification along with three performance slips. If you tolerate wasteful practices, you forfeit one of the slips--and with it, part of your award for the years-end total.

Special attention has been accorded to the brigade contract, which has proven its effectiveness. Last year, for instance, contracted links containing 14.3 percent of the equipment operators accounted for more than 27 percent of the entire output of crop production. Because of this, more than two thirds of the 834 corn-growing brigades and links have shifted over to collective contract.

The persistent spring weather has moved back the normal planting period for sunflowers, and in several places, it is crowding up against the corn planting period. But, as a matter of fact, the equipment needed for both crops is the same. The most important thing right now then is to make use of it with maximal efficiency. As an example, in the Tsarichanskiy Rayon, where one of the largest

harvests in the oblast was gathered last year, the plan with regard to corn planting is already more than halfway to realization. Operations are progressing satisfactorily in the Verkhnedneprovskiy, Sofiyevskiy, Novomoskovskiy and several other rayons. These places are strictly observing technological requirements for the application of herbicides and cultivation of the soil, while planting is conducted by the group method and a two-shift system of equipment operation has been installed.

At the same time, on many farms in the Dnepropetrovskiy, Petropavlovskiy, Apostolovskiy, Tomakovskiy and Solonyanskiy rayons, most of the tractors are used only on one shift. As a result, many operations on the kolkhozes Dnipro in the Apostolovskiy, imeni Dmitrov in the Tomakovskiy rayons, as well as on several other farms, are performed well behind schedule.

Dnepr, the scientific-production association for corn, renders considerable assistance to farmers of the oblast. Researchers have taken on the role of overseeing 100 farms, where in the past year corn harvests have been low. Their shared commitments for 1984 include a prescription for raising corn harvest levels from 26.1 to 38.4 quintals per hectare.

A fierce competition is shaping up among Dnepropetrovsk growers for the popular prize imeni Mark Ozerneyy. A two-time winner of this prestigious trophy--the link directed by B. L. Shiba from the Chervoniy Partizan kolkhoz in the Verkhnedneprovskiy Rayon--has committed to harvesting 200 quintals of grain from each of five hectares. The link led by I. G. Posukan from the kolkhoz imeni 22nd CPSU Congress in the Pavlogradskiy Rayon is working to attain 90 quintals per hectare on 62 hectares of land.

The leading growers are backing up their lofty commitments with intensive labor.

#### ZAPOROZHYE OBLAST

The planting of corn here is being carried out by 918 links and mechanized brigades. More than a third of the planned cropland has already been planted to corn.

A great deal has been done to ensure that the targeted harvest level will be attained. Since fall, more than 2 million tons of organic fertilizers have been applied to the land set aside for cornfields. The land area on which this crop is being cultivated under industrial technology has been expanded, and the planting of corn on irrigated land has increased twofold.

And yet, the pace of planting operations leaves something to be desired. Whereas the Melitopol'skiy, Chernigovskiy and Priazovskiy rayons have already completed theirs, the Vol'nyanskiy, Novonikolayevskiy, Tokmakskiy and Vasil'yevskiy rayons are still far from plan realization. And the problem here is not simply one of zonal disposition of the rayons.

Many officials are citing the cold weather as a factor. Spring has, in fact, been delayed, but even so, the optimal planting periods have long since arrived, and this fact needs to be reckoned with. Water supplies for irrigation over the course of the growing season are not being properly managed in all cases. In the

Akimovskiy, Vol'nyanskiy and Zaporozhskiy rayons, despite the recent rains, they are continuing with irrigation operations. And they are correct in doing so. Water reserves are inadequate. In fact, in the Veselovskiy and Orekhovskiy rayons, they have declined, and, apart from that, the pace of operations is slow. There is little irrigated land in Orekhovskiy Rayon--a total of 4,500 hectares. But, because of weak labor organization, irrigation operations here are conducted in a highly unsatisfactory manner.

This year, for the first time, Zaporozhye growers were provided with seed for corn varieties and hybrids with different maturity dates. A new hybrid, Dneprovskiy-505MV, which was developed by Dnepropetrovsk plantbreeders, has been regionalized over an area of 100,000 hectares. This should also help in obtaining the projected harvest.

Zaporozhye growers are trying to adopt everything of value from their neighbors that they can. Following the example of Dnepropetrovsk farmers, they have begun to introduce new, more effective herbicide sprayers. Unfortunately, however, industrial concerns in the city were late in manufacturing them in time for the beginning of the planting period. On some farms in the Zaporozhskiy Rayon, herbicides are applied with the use of specially refitted DDA-100M sprayers. While this is just an experiment, the experts are already giving it high marks.

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## TILLING AND CROPPING TECHNOLOGY

### DNEPROPETROVSK CORN GROWERS AIM FOR MILLION-TON HARVEST RECORD

Moscow TRUD in Russian 6 May 84 p 1

[Report on interview with D. Romanyuk, secretary of the oblast council of trade-unions for the agroindustrial complex, by TRUD correspondent I. Ostrovsky in Dnepropetrovsk: "The Field Under Examination"; date of interview not given]

[Text] Corn growers of Dnepropetrovsk Oblast have committed themselves to raising and harvesting a million tons of the amber grain without the use of manual labor.

The rainfall had been heavy. The apricot orchards were adorned with a shower of pinkish-white blooms. As if beckoned by this emblem of spring, Dnepropetrovsk corn growers drove their seeding machinery into the fields. A major test confronts them this year. They will need to raise and harvest a million tons of corn. Such a harvesting level has never before been reached by any of the nation's southern oblasts.

How have the agricultural trade-union committees prepared themselves for the growing season? How do they view their role in the effort to achieve the Dnepropetrovsk million? The answers to these questions were given to our correspondent, I. Ostrovsky, by the secretary of the oblast council of trade-unions for the agroindustrial complex, D. Romanyuk:

"First of all, I would like to say that the entire corn crop will be raised under progressive industrial methods, without the use of manual labor. During the fall of last year, tractor crews carefully prepared the soil and fertilized it. Winter was the period for agrotechnical training. Within the oblast, 680 mechanized brigades and links were put together. They will all operate under a collective contract.

"The trade-union committees have been quite concerned with measures aimed at providing moral and material incentives. We are for the first time introducing a system of accountability for operational quality and precise adherence to technological requirements. Attestation commissions on kolkhozes and sovkhoses have adopted testing procedures for equipment operators and have certified them for work in the cornfields.

"Each booklet contains three tickets: green, yellow and red. Farm specialists and RAPO[rayon agroindustrial association] workers, when they detect waste in an operation,

are required to formally request removal of one of the quality tickets. The decision regarding this is made by the link or brigade collective. The loss of a green ticket carries with it a 25 percent reduction in the amount of the award for final work results. Yellow results in one half reduction. The "price" of a red ticket is very high--complete loss of the award.

"Last year, the All-Union NII for corn, along with its experiment and breeding stations, oversaw the operation of 40 farms in the oblast, aiding them in the production of programmed corn harvests. This brought about the formation of the scientific-production association [SPA] for corn, "Dnepr". The results of the introduction of scientific advances are promising. Harvesting levels on farms working with the SPA are significantly higher than the average level.

"We have in the oblast, in addition to the All-Union NII for corn, a number of agricultural institutions, four technical schools, support units of the scientific-research institutes of agricultural economics imeni Shlikhter, and of irrigation farming.

"At a meeting of the presidium of the oblast council of trade-unions, a cooperative agreement was signed. Scientists at VUZ's, technical schools and agricultural NII's have taken on the oversight of farms which stand to harvest 600,000 tons of corn from 146,000 hectares.

"We have given some thought to increasing accountability for high final results by all partners in the agroindustrial complex. The rayon offices of "Sel'khoz-tekhnika" and "Sel'khozkhimiya" [chemical aids to agriculture production association] have concluded an agreement concerning cooperation and a socialist competition among mechanized brigades and links. Its aim is to provide a harvest exceeding the average figures for the past five years.

"The proposals concerning material incentives called for a part of the plan- and above-plan harvest of corn to be awarded to equipment operators as a natural form of payment. At the same time, livestock breeder would also receive young cattle, hogs and poultry as a natural form of payment.

"As you can see, plans have been made on a broad scale. The preparation has been carefully carried out. The primary objective now is to organize the execution of the entire concept. This much is certain: the agricultural trade-union committees of the oblast are making a valuable contribution to the effort to obtain a million tons of choice amber grain."

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## TILLING AND CROPPING TECHNOLOGY

### PROBLEMS ASSOCIATED WITH CORN HARVESTING

Moscow SEL'SKAYA ZHIZN' in Russian 19 May 84 p 1

[Article by Kabardino-Balkar ASSR correspondent S. Lorsanukayev: "Flag Over the Work Unit"]

[Excerpts] Kabardino-Balkar corn-growers are working toward the realization of 100-quintals-per-hectare grain harvests.

Last year, each hectare in the Baksanskiy Rayon yielded 54 quintals of the amber-colored grain. Now their efforts are directed to the establishment of a solid foundation for an even greater harvest.

"Toward this end, we have taken great pains to develop a system of political educational measures," explains A. A. Bliyev, the first secretary of the Baksanskiy CPSU raykom. "Party and party-komsomol groups, as well as deputy posts, have been set up within the mechanized brigades and links."

No matter which farm you chance to visit these days, you see all around you an unprecedented level of enthusiasm among the workers.

Current-year projections called for the harvesting of 50 quintals from each of 64,000 hectares. But, commitments were made in the 254 mechanized brigades and links to produce from 60 to 100 quintals of the amber grain per hectare. By far the greatest part of the corn is grown as an industrial crop using programmed harvests.

"Bearing in mind past mistakes, the farmers now carefully observe the framework for planting operations as it pertains to maturity dates," states V. Beslaneyev, the minister of agriculture for the Kabardino-Balkar ASSR. "As an example, the early silage varieties and hybrids comprise 20 percent of the total sowing, mid-season varieties--25-30 percent, and late-season--40-50 percent. This greatly facilitates the harvesting of the corn."

Each year, more than a third of the arable land is sown to corn in this autonomous republic. The land is being exhausted and needs extensive fertilization. Farmers complain of fertilizer shortages. Powerful indictments are also being directed at plant breeders. Corn-growers expect them to provide higher yielding varieties and hybrids. They also are experiencing a problem with irrigation. It seems that the

land development experts of the neighboring autonomous republics and Stavropol Kray have not been able to solve the problems associated with the well-planned storage and distribution of the water resources of the Terek Basin.

As each hour passes in the spring planting cycle, the way the farmers do their work today will determine the outcome of the harvest to come...

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## TILLING AND CROPPING TECHNOLOGY

### BRIEFS

CORN CROP PROJECTIONS--Nalchik, 3 May 84--Corn growers of the Mayskiy Rayon were the first in the republic to get their planting work units into the fields. On the kolkhozes "Lenintsi" and "Krasnaya niva," as well as several others, tractor crews have begun sowing dozens of hectares to this important crop. Work is underway on farms of the Terskiy and Prokhladnenskiy Rayons. Friendly competition has developed among outstanding links and brigades with the aim of obtaining as much as 90-100 quintals of grain from each hectare. The corn-growers are committed to achieving maximum work productivity during the days of May. [telephone report by A. Konstantinov] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 4 May 84 p 1] 9481

HIGHER CORN HARVEST PLANNED--Rovno, 23 May 84--Tractor crews of the sovkhos imeni 25th CPSU Congress in the Goshchansky Rayon were the first in the oblast to complete corn planting operations. Last year, they harvested 90 quintals of corn per hectare, and this year they are determined to break through the 100-quintal barrier. Right now, the link tractor crews, which are operating on brigade contract, have commenced initial interrow cultivation work. This year, industrial technology is being introduced in corn cultivation on all farms of the oblast. Following the lead of the outstanding units, more than 300 mechanized links, armed with a collective contract, are working toward the final result. [by nonstaff correspondent N. Tereshko] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 24 May 84 p 1] 9481

CORN CROP PREPARATIONS--Lvov--This year, the confields of the Carpathian region will be sown with seed developed by industrial technology. Specialized technological complexes have completed the processing of seed prior to shipment to farms. [Text] [Moscow TRUD in Russian 3 Apr 84 p 1] 9481

CORN SOWING COMPLETED--Orel--Heavy spring work in the feed-crop fields of the oblast has been completed. Brigade and link tractor crews have finished corn-planting operations. Corn is the primary silage crop in the southern part of the Non-Chernozem zone. This year, it has been sown over an area exceeding 100,000 hectares. The planting of seed was carried out within the optimal time frame on adequately fertilized and well-cultivated fields. The fate of the corn has been entrusted to the care of 470 brigades and links. [Text] [Moscow TRUD in Russian 26 May 84 p 1] 9481

SOUTHERN UKRAINE CORN CROP--Many farms are counting heavily on expanded cultivation of corn to fulfill commitments made for the fourth year of the current 5-year plan. In Odessa Oblast, for instance, the area sown to this crop has

doubled. Helping greatly in this effort are the outstanding achievements of the leading farms, of which there are many. Several kolkhozes of the Baltskiy and Krasnooknyanskiy Rayons have harvested more than 50 quintals of corn per hectare from nonirrigated land, despite the fact that last year's weather was not favorable. This is an indication that another important factor, besides weather, is skill. This year, 90 mechanized subunits are involved in the cultivation of corn. All of them have been shifted to contract work, which has become an additional incentive to provide greater yields of this crop. Farmers of the Baltskiy Rayon recently initiated an oblast-wide competition designed to yield 50 quintals of grain per hectare on nonirrigated land. Many others have followed their lead. Other oblasts as well have demonstrated their skill in obtaining greater corn harvests. Growers in Kherson Oblast have now resolved to make wider use of valuable knowledge gained by leading farms and increase the gross harvest of the amber grain up to 700,000 tons. In Nikolayev Oblast, they are aiming for a figure of 760,000 tons. Dozens of contract links engaged in corn-growing in Crimea have taken on the commitment to harvest no less than 100 quintals of grain per hectare, and to ship in excess of 250,000 tons to start granaries. [by A. Kucherenko, PRAVDA correspondent] [Excerpts] [Moscow PRAVDA in Russian 20 Apr 84 p 1] 9481

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